

Report on review of literature and selected university return to campus and travel plans



PSUTS – iMOVE Project 3-022

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26th November 2021



"This research is funded by iMOVE CRC and supported by the Cooperative Research Centres program, an Australian Government initiative."

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Acronyms

CBD Central Business District

CIS Campus Infrastructure and Services (at the University of Sydney)

EV Electric Vehicle

MaaS Mobility-as-a-Service

Macquarie University (MQU)

STP Sustainable Travel Plan

TDM Travel Demand Management

TfNSW Transport for New South Wales

University of New South Wales (UNSW)

University of Sydney (USYD)

University of Queensland (UQ)

University of Technology Sydney (UTS)

University of Western Australia (UWA)

University of Wollongong (UOW)

WFH Working from Home

Executive Summary

This report forms the first Deliverable of the iMOVE Promoting Sustainable University Travel Choices project (PSUTS – iMOVE Project 3-022).

The report begins with a review of literature around the definition of Travel Demand Management (TDM) and examples of TDM measures in practice. We turn to the specific case of TDM in an education precinct (university) context considering international experience to date and the influence of changing travel and study practices in response to COVID-19. The important role of regular surveys of staff and student travel behaviour is highlighted. Case study examples of TDM measures that have been introduced in university settings are presented. The main body of the report comprises the review of selected University Sustainable Travel Plans (STP). Five are from Greater Sydney – the University of Sydney, University of New South Wales, University of Technology Sydney, Macquarie University and University of Wollongong; and two are from Go8 universities from the rest of Australia – University of Queensland and University of Western Australia. To aid a comparative review of the selected travel plans, an evaluation template was developed. The review also includes return to campus plans developed to encourage COVID-Safe Travel in a university context (where available). The latter part of the report discusses the draft TfNSW Travel Plan Toolkit for Universities, noting that a crucial step in any university TDM program is the development of a robust travel plan.

Based on the outcomes of the review of sustainable travel plans completed and a comparative analysis of findings, including consideration of the effectiveness of TDM measures that have been introduced on campuses, recommendations are offered to aid the development of refined guidelines for sustainable travel planning in the university context. Key amongst these is that where possible a standalone STP is preferable to a transport section within a wider Sustainability Plan, that responsibility for the production of an STP must be adequately resourced, and that the plan should incorporate a process for the robust monitoring and evaluation of actions and interventions with measurable outcomes. The STP should be regularly refreshed and informed with evidence from an on-going (ideally 2-year) travel survey of the whole university community.

Introduction

This report forms the first Deliverable of the iMOVE Promoting Sustainable University Travel Choices project (PSUTS – iMOVE Project 3-022). Task 1 of the project comprises a rapid review of staff and student travel plan literature and selected university sustainable travel plans and return to campus plans. The review of plans ensures coverage across NSW and across Australia (by reference to activities at other Go8 universities). The aim of Task 2 is to review the Transport for New South Wales (TfNSW) Travel Plan Toolkit for Universities and provide recommendations to TfNSW for synthesis with any unmet best practices.

The report is organised as follows. We begin with a review of literature around the definition of Travel Demand Management (TDM) and examples of TDM measures in practice. We turn to the specific case of TDM in an education precinct (university) context considering international experience and the important role of regular surveys of staff and student travel behaviour. The main body of the report comprises the review of selected University Sustainable Travel Plans (five from Greater Sydney and two from the rest of Australia). To aid a comparative review of the selected travel plans, an evaluation template was developed. The review also includes return to campus plans developed to encourage COVID-Safe Travel in a university context (where available). The latter part of the report discusses the draft TfNSW Travel Plan Toolkit for Universities. A crucial step in any university TDM program is the development of a robust travel plan. Based on the outcomes of the review of sustainable travel plans completed and a comparative analysis of findings, recommendations are offered to aid the development of refined guidelines.

Defining Travel Demand Management (TDM)

TDM initiatives are applied by transport planners to establish and enable appropriate use of critical transport infrastructure. There is an extensive literature on TDM. Meyer (1999) defined TDM initiatives as an 'action or set of actions aimed at influencing people's travel behaviour in such a way that alternative mobility options are presented and/or congestion is reduced'. Gifford and Stalebrink (2001) note that TDM has gained attention since the 1970s primarily as a result of significant increases in travel that have not been accompanied by increases in infrastructure capacity.

TDM strategies are normally applied as a package including measures as 'sticks' to directly discourage private car use (e.g., parking restrictions or regulations), as well as 'carrots' to encourage public transport use. A common example of a TDM measure to encourage public transport use is a travel plan that can be tailored to enable travellers to maintain their desired lifestyle whilst encouraging the adoption of low carbon mobility solutions. Noting the synergies with Mobility-as-a-Service (MaaS), Farahmand et al (2021) examine the potential role of MaaS as a TDM tool to influence commuting mode choice. From a study of employees in the Netherlands they find that MaaS could be seen as a promising element in TDM strategies combining carrots and sticks deterrents.

Babb et al (2014) define TDM as the application of demand strategies to improve the efficiency of the transport system and propose a TDM matrix (Figure 1). The TDM matrix identifies nine categories of specific travel demand instrument which are classified as Push, Pull or Travel Behaviour Change Instrument (see Table 1).

Table 1: Defining TDM (Babb et al, 2014)

Travel demand management measures include incentives (pull measures) and disincentives (push measures) to enact travel behaviour change. In addition, TDM measures may provide information or education to affect people’s perception of or attitudes towards travel alternatives with intention being behavioural modification.

- Push measures are designed to make travel by SOV [single occupancy vehicle] less attractive.
- Pull measures improve the competitiveness of alternate travel options, including no-travel.
- Behaviour modification programs rely on changing travellers’ perceptions or attitudes toward alternate travel options

Travel Demand Management Matrix - Summary

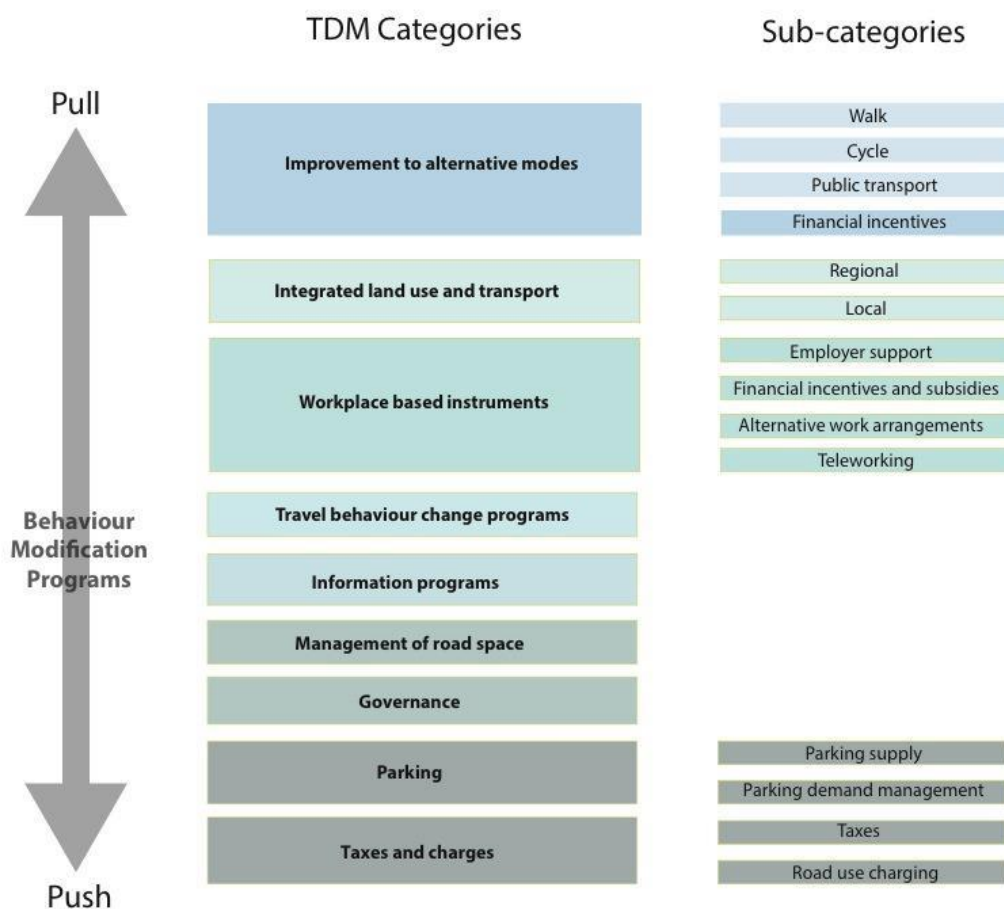


Figure 1: The Travel Demand Management Matrix (Babb et al., 2014)

Sammer and Saleh (2009) note that, when implemented effectively, TDM measures can contribute to the realisation of a more efficient transport system, improved environmental conditions and improvements in safety as well as revenue generation to invest in alternative transport systems. TDM initiatives often apply a combination of “push” (e.g., encouraging individuals or organisations to avoid unsustainable travel modes by making them less attractive) and “pull” measures (e.g., encouraging individuals or organisations to adjust to more sustainable travel modes by increasing their attractiveness).

Mott MacDonald (2021) introducing their TDM Toolkit define TDM as “an umbrella term for the application of strategies and policies to reduce travel demand, or to redistribute this demand in space, mode or in time” (p 8) and go on to suggest that an effective TDM plan comprises three key pillars: the creation of capacity, network management and travel behaviour change solutions. Figure 2 depicts the five steps required for the effective development and delivery of a TDM Action Plan.

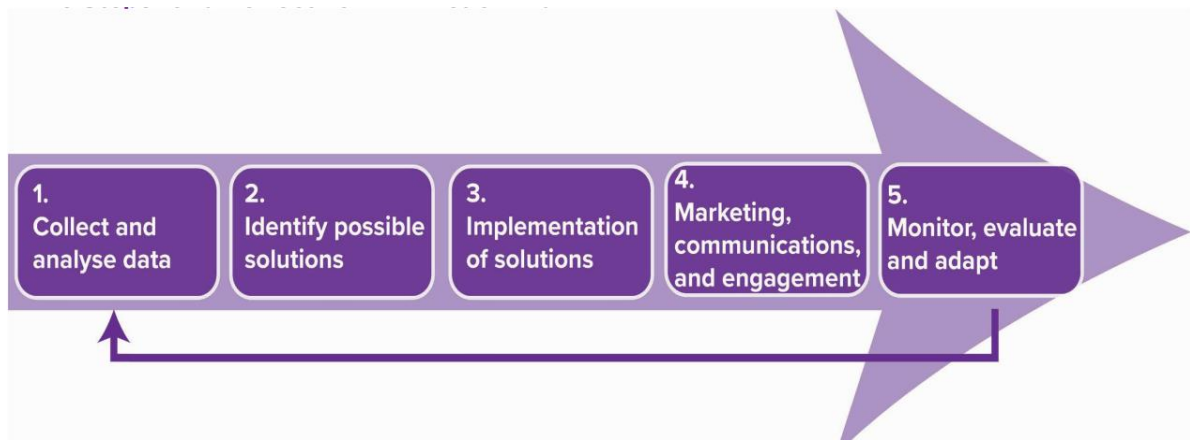


Figure 2: Five steps required for an effective TDM Action Plan Mott MacDonald (2021)

Transport for New South Wales define TDM as “the application of a focused, data led strategy that seeks to change demand on transport networks by redistributing journeys to other modes, times, routes or removing the journey altogether”. They note that TDM is most effectively applied when there is a reason for change. It has been typically applied in large event scenarios, but is now integrated into urban transport strategies, infrastructure projects within a movement and place framework and is currently integral in the response to the COVID-19 pandemic (Figure 3).



Figure 3: TDM in New South Wales

Litman (cited by Crane, 2021) has proposed a typology of the factors that affect transport demand with a categorisation by demographics, commercial activity, transport options, land use, demand

management and prices (Table 2). All are relevant to an understanding of TDM and should be included in policy analysis and planning.

Hensher (2021) notes that most TDM actions have modest individual impacts, typically affecting a few percent of the total vehicle travel in an area. In order to achieve significant total impacts, it is usually necessary to develop a comprehensive TDM strategy that includes an appropriate set of procedures (see Table 3). Riggs (2015) suggests that TDM initiatives cannot be used in isolation and should be implemented in parallel with personalised outreach and marketing.

Table 2: Factors that affect transport demand

Table ES1 Factors That Affect Transport Demand

Demographics	Commercial Activity	Transport Options	Land Use	Demand Management	Prices
Number of people (residents, employees and visitors)	Number of jobs Business activity Freight transport Tourist activity	Walking	Density	Road use prioritization	Fuel prices and taxes
Employment rate		Cycling	Mix	Pricing reforms	Vehicle taxes and fees
Wealth/incomes		Ridesharing	Walkability	Parking management	Road tolls
Age/lifecycle		Automobile	Connectivity	User information	Parking fees
Lifestyles		Taxi services	Transit service proximity	Promotion campaigns	Vehicle insurance
Preferences		Telework	Roadway design		Transit fares
		Delivery services			

Various factors that affect transport demands should be considered in policy analysis and planning.

Table 3: TDM tools

Management area	Management tools	Implementation examples
Planning Instruments	Integration of Land Use and Transport Planning	e.g. Transit-oriented development
	Public Transport Promotion	e.g. Priority at intersections
	Strategies for Non-Motorized Modes	e.g. Cycling policy
Regulatory Instruments	Physical Restraint Measures	e.g. Pedestrian zones
	Traffic Management Measures	ITS
	Regulation of Parking Supply	Maximum parking limits
	Low Emission Zone	In city center
	Speed Restrictions (30 km/h)	In built-up areas
Economic Instruments	Road Pricing	e.g. during peak hours
	Tax Incentives	e.g. for cleaner vehicles
	Parking Pricing	Off- and on-street parking
Information Instruments	Public Awareness Campaigns	e.g. participation in mobility weeks
	Stakeholder Conferences	On transport policy documents
	Driver Training / Eco Driving	e.g. for city drivers
	Promotion of Mobility Management in Companies	e.g. Employer passes, flexible work hours
Technology	Promotion of Cleaner Technology	e.g. Green procurement

Examples of TDM measures

Mahmood et al (2009) note that TDM initiatives encompass the desire to optimise transportation systems for commuters through measures to encourage enhanced accessibility, predictability, information, choice and system performance. As noted in Table 3 there is a large set of potential management tools to support the desire of more sustainable transport behaviours. Several are considered briefly below.

Positive incentives for active transport modes. In several European countries, cyclists can claim rebates for every kilometre cycled into work. For instance, in the Netherlands, where cycling rates are the highest in the world (Harms & Kansen 2018, p.4), cyclists can claim €0.22 for every kilometre cycled to work¹. In response to the COVID-19 crisis, the French government announced a Sustainable Mobility Package, which includes up to €400 per year, tax free, for employees who can prove the use of sustainable transport modes, including car-sharing and cycling². A focus on encouraging active modes can be supported by the introduction of *bike- and walk-to-work days*. Employers can organise and publicise an annual or monthly 'bike-to-work day,' with accompanying events and bike maintenance services. It can also encourage offices or departments to designate 'bike champions' to motivate colleagues to participate. *Cycling and road safety lessons* provide confidence for people with little experience of cycling. Local authorities can partner with local NGOs to provide free road safety and bike maintenance lessons. Another measure to promote active travel is the introduction of '*car-free street*' or '*open-street*' days. This involves the closure of selected main streets on Sundays and public holidays for use by pedestrians and cyclists. This practice was first used in Bogotá in the 1970s with its Ciclovía days and has since spread around the world. It has proved enormously popular wherever it was introduced (Barclay, 2017).

Regulatory instruments to support more sustainable transport behaviours. Examples include the introduction of vehicle speed limits and overtaking laws which can significantly affect cycling safety, and perceptions of safety (Aldred, 2016). COVID-19 has resulted in increases in walking and cycling, the provision of open streets, pop up cycle lanes and widened pedestrian access. According to the European Cyclist Federation³, London implemented 75 km of pop-up cycle lanes, and Milan 51 km. Similarly, in some countries "smaller cities" have collectively announced and implemented hundreds (aggregated) of pop-up cycle lanes; this is the case in France (Nelson et al, 2021). Some cities have responded with regulations designed to increase cyclist safety; Brussels, for instance, reduced speed limits to 20 km/h in the city centre⁴. Traffic rules prioritising cyclists and pedestrians in shared road spaces are another option, especially at crowded junctions (International Transport Forum, 2020).

Parking management is another example of a regulatory instrument. Parking takes many forms, including pick-up and drop-off zones, loading/construction zones, commuter parking, event parking mobility spaces, carshare pods, EV charging stations, etc. Parking policies should be embedded in both transport and land-use plans with links to other relevant plans and is arguably a significant but often overlooked factor in creating transit-oriented development and ultimately sustainable cities. Table 4 depicts a variety of approaches to parking management.

1 <https://english.cw.com.tw/article/article.action?id=2306>

2 <https://www.fleeteurope.com/en/shared-mobility/france/features/france-advances-sustainable-mobility-allowance-avoid-congestion?a=DQU04&t%5B0%5D=mobility%20allowance&t%5B1%5D=France&t%5B2%20%5D=COVID-19&curl=1>

3 COVID-19 Cycling Measures tracker. <https://ecf.com/dashboard>

4 <https://www.brusselstimes.com/brussels/107383/coronavirus-city-of-brussels-lowers-speed-limit-to-20-km-h/>

Table 4: Approaches to parking management (Banfield, 2021)

TRADITIONAL APPROACH	CONTEMPORARY APPROACH
Features	Features
<ul style="list-style-type: none"> • meet peak demand • set min rates in private domain • don't regulate public domain • uniform application of policies • parking free 	<ul style="list-style-type: none"> • constrain supply • set max rates in private domain • regulate public domain • vary application according to context • parking priced
Problems	Benefits
<ul style="list-style-type: none"> • parking oversupplied, increasing 'costs' • sprawling development • distance a barrier to walking • reduced vitality & amenity • increased traffic, including 'circling' • parking experience unpredictable & often stressful • frequent flouting of regulations & lack of enforcement • no pricing to assist with management & revenue generation • downward trend toward degraded neighbourhoods & poor sustainability 	<ul style="list-style-type: none"> • parking limited, so 'costs' are limited • compact development • walkable • enhanced vitality & amenity • reduced traffic • parking experience predictable • greater compliance with regulations & adequate enforcement • pricing improves efficiency of management and generates revenue for other improvements • upward trend toward enhanced neighbourhoods & sustainability

During the pandemic the goals of parking policies have been to provide free parking for essential workers, and to limit the use of public transport and encourage the use of private vehicles in order to prevent the spread of the pandemic; with obvious disadvantage in a sustainability context (Nelson et al 2021).

Information as a TDM tool. The role of personalised travel planning (PTP) in the workplace context is discussed in more detail in the discussion of TDM in a workplace context below. It has long been a truism that for a public transport service to be used, the public must know where and when the service is provided (Nelson, 2018). It is important that travellers (regular and prospective) are aware of the available services, both pre-trip and enroute and there is considerable evidence that easily understandable journey planning information fosters confidence in public transport. During the pandemic journey planners have been modified to help travellers plan their journeys more safely by showing whether physical distancing can be observed (e.g., in Sydney).

Working from Home (WFH) as a TDM tool. Working from home (WFH), or teleworking, has long been a component of the TDM toolkit. The outbreak of the COVID-19 pandemic was associated with a rapid move to WFH as stay at home orders were implemented. The significance of the impact of WFH, with estimates of up to 2 days / week at home on a long-term basis, means that it should now be recognised as a COVID-19 transport policy lever (Nelson et al, 2021). Significantly, it appears that COVID-19 may have broken the resistance of many employees and employers to working from home (Beck and Hensher, 2020). It is noteworthy that even in those jurisdictions where governments have strongly encouraged people to return to the office and which have officially entered "level 0" (such as the UK), there remains a marked enthusiasm for hybrid modes of working and reluctance of employees to return to the office full-time. Also, employers who benefit from reduced expenditure on the provision of office space, telecommunications services, are supportive of hybrid models of working.

In the longer term, the growth of WFH *may* allow public transport providers to flatten the peak, however, this will be offset by lower revenues and the potential need to boost capacity in suburban areas if more people move around the suburbs during off-peak times. There is also the potential for the development of serviced offices in suburban areas allowing people to work out of home and enjoy the networking and collaboration without travelling into central office areas. In their analysis of the sustainability potential for telecommuting Budnitz et al (2021) suggest that experience during the pandemic is also likely to have altered the way that work and non-work practices are bundled, further underlining the value of easy access to local non-work activities and services.

TDM in a workplace context

The introduction of TDM initiatives in travel plans via the workplace can give employers the unique ability to influence travel behaviour of large numbers of commuters; importantly, both the journey to work, and travel within the course of work, can be addressed.

Transport for NSW undertook a huge business employee consultation as part of their “Travel Choices” TDM initiative (beginning in 2015) to reduce AM peak hour vehicle traffic entering, leaving and circulating within the Sydney Central Business District (CBD) area impacted by the preparation for the light rail works, which included the reorganisation of CBD bus services. Travel Choices⁵, which is introduced later in this report, is a free resource to help individuals, businesses and organisations prepare for and adapt to the changes to Sydney’s transport network.

Travel plans can be developed for different environments where large numbers of individuals travel daily to and from including offices, schools, universities and hospitals (Logan et al., 2020). Rye et al, (2011) noted that travel plans had by then become an important part of policy statements in the UK with significant potential to solve transport problems and meet CO2 reduction targets. Workplace travel plans (Department for Transport, 2009) are commonly seen as interventions designed to change employee travel behaviour which are instrumental in reducing congestion and pollution during commuter travel (Vanoutrive, 2019). Evidence suggests modal shifts of 10 – 20% in journey-to-work can be achieved following a co-ordinated personalised travel planning (PTP) campaign, although context is very important (Cairns et al, 2004; Cairns et al., 2010; CHUMS, 2016). Riggs (2015) suggested that TDM initiatives cannot be used in isolation and should be introduced in parallel with outreach and marketing which provides individuals with alternatives that work for them personally. Ison & Rye (2008) note that site-specific problems with congestion, parking and/or transport-related staff recruitment need to be addressed to ensure TDM initiatives and travel plans work together.

Personal Travel Planning (PTP) is a well-established targeted marketing technique that identifies people willing or able to reduce their private car use, and then provides them with personalised travel information in the form of personalised journey plans. The *myPTP* tool⁶ is the only journey planner in the UK that gives you public transport, walking and cycling results as well as car sharing matches in one place to be able to make an informed, yet independent decision on how you can best travel to your place of work. Table 5 presents a summary of the results from applying *myPTP* tool to employees at three separate sites in the UK. This illustrates that while the tool can be viewed as an effective intervention to generate modal change, the level of mode shift to carpooling is very variable.

5 <https://www.mysydney.nsw.gov.au/travel-choices>

6 <https://business.liftshare.com/products/workplace-travel-planning/>

Table 5: Examples of *myPTP* impacts – UK evidence

Site	Number of <i>myPTP</i> delivered	Follow up survey responses	'considered' changing their mode of travel	confirmed modal shift	Single occupancy car travel		Cycling		Train		Walking		Carpool	
					Before	After	Before	After	Before	After	Before	After	Before	After
Blackburn with Darwen Borough – 6 largest employers	1500	96	43.5%	17.6%	65.6%	55.2%	2.1%	6.2%	3.1%	5.2%	6.2%	10.4%	4.1%	8.3%
Cross Keys Homes employees in Peterborough	230	59	13.6%	6.78%	79.7%	74.6%	1.7%	1.7%	0	0	6.8%	8.5%	8.5%	11.9%
Eastleigh Borough Council employees	180	53	34%	25.5%	78.7%	53.2%	10.6%	19.1%	4.3%	14.8%	2.1%	8.5%	---	---

The example for Blackburn with Darwen Borough shows a very positive confirmed modal shift (17.6%) and 43.5% considered changing their mode of travel following receipt of *myPTP*. The modal share for carpooling increased from 4.1% to 8.3%. This is a significant increase but it should be noted that the circumstances surrounding the use of personalised travel plans has an influence on the results achieved. In this case the delivery of *myPTP* plans to employees was accompanied by a comprehensive 'smarter choices' campaign, costing over £1m, which highlighted sustainable transport options including carpooling combined with the provision of improved walking, cycling and public transport infrastructure.

The example for Cross Keys Homes employees in Peterborough is also instructive. At this site the employees exposed to *myPTP* were not changing their destination, nor were they being provided with substantial new infrastructure raising the attractiveness of alternative modes of travel. The same journeys with the same existing alternative travel options were under consideration. As a result, a much smaller proportion of employees (13.6%) considered changing their mode of travel following receipt of *myPTP*, and 6.8% confirmed that they changed their mode of travel. Carpool mode share increased from 8.5% to 11.9% which represents half of the total confirmed mode shift).

The example for Eastleigh Borough Council shows the greatest confirmed modal shift (25.5%). The explanations for these figures relate to the circumstances. Firstly, the Council were relocating to a new office building in a central part of the town from a number of smaller offices located across the Borough. This immediately created the need for a new commute journey for employees and as such presented an opportunity to consider new possibilities for travelling to work. However, as employees were only just establishing their method of getting to work, the new site did not have an existing cohort of carpool users. This meant that carpool options were absent from the *myPTP* results presented to employees.

Corporate (or Company) Mobility Management (CMM) forms part of the literature on Travel Demand Management. CMM initiatives are defined by International Transport Forum (2010) as strategies which “seek to promote sustainable commuter, business and customer travel”. Employee mobility is an important component of mobility management. A travel hierarchy is a well-established method for integrating sustainable, multi-modal mobility for work travel as part of a package of TDM measures. Such a hierarchy implies that walking and public transport should be considered for short journeys regardless of frequency. For longer infrequent trips a taxi could be the best option. Car sharing or pool cars can be utilised for regular long-distance travel and car sharing provides a natural future use case for Autonomous Vehicles (Mounce and Nelson, 2019). A company vehicle should be the last option when the distance travelled each year is high and business utilisation is close to 100%. The UK Energy Savings Trust has proposed a travel hierarchy (Figure 4) that is also useful to determine the mode of transport for employee travel, where it gives employees guidance with preferences for tele/video

conferencing, public transport, company car, pool car and usage of grey fleet (personal car for business use).

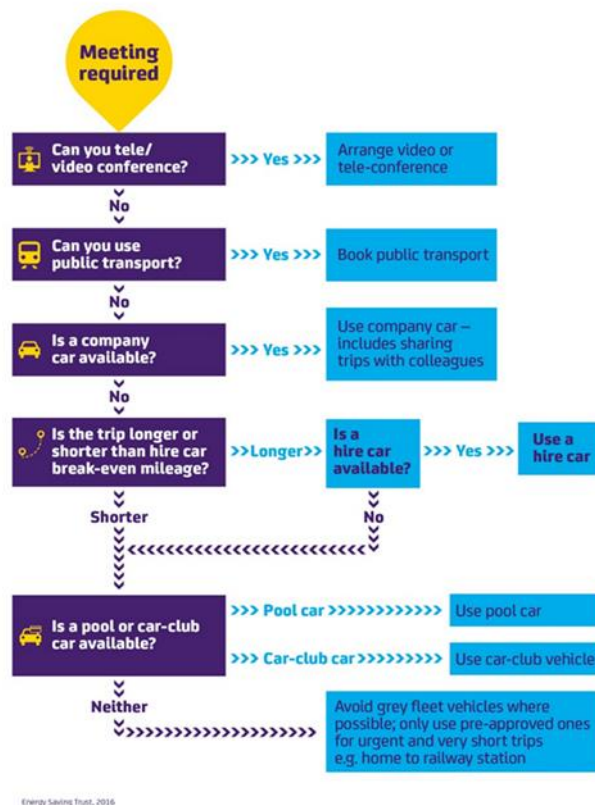


Figure 4: A travel hierarchy (Source: Energy Savings Trust, 2016⁷)

Findings from the OECD International Transport Forum study on CMM revealed that, for most businesses, mobility initiatives targeting customers and visitors are very similar to those aimed at the employee journey-to-work, in terms of end-of-trip infrastructure, incentivisation and information provision (International Transport Forum, 2010). Their study revealed that the magnitude of change brought about by CMM initiatives can be quite large (15-20% reduction in drive-alone travel) and cost-effective. Avoided parking costs was a recurrent major cost saving highlighted by a scan of best practice cases from across Europe.

Education Precinct TDM

Education Precinct TDM has been less widely studied and Logan et al (2020) note that while TDM initiatives have begun to feature predominantly in transport planning and programmes over several decades an understanding of the role and influence of TDM initiatives within a university context is still emerging.

Mulley and Reedy (2016) note that tertiary education institutions, particularly those in central and inner-city locations are large trip generators attracting trips from students and staff; thus, TDM initiatives within a university setting have the potential ability to influence tens of thousands of commuters. A number of early contributions to the literature included a comprehensive review of TDM in a university context by Toor and Havlick (2004) and Bond and Steiner (2006) for the US, Curtis and Holling (2004) for Australia and Watts and Stephenson (2000) for the UK.

⁷ <https://www.energysavingtrust.org.uk/sites/default/files/images/alternative%20to%20grey%20fleet.png>

As regular travel surveys, often implemented as part of a travel plan (see Tables 6 and 7), have become more commonplace (although not necessarily implemented regularly) so the knowledge of the characteristics of staff and student travel behaviour has increased (see for example, Rybarczyk et al., 2014; Ribeiro et al., 2020; Duque et al 2014). A detailed review of student and staff commuter behaviour is given in Logan et al, 2020. Students tend to have lower incomes, so their travel choices are constrained by costs and influenced by work and other commitments additional to university study leading to complex travel patterns. A recent analysis of a 10-year dataset of staff and student travel patterns⁸ at the University of Aberdeen (Logan et al, 2020) found that, compared to staff, students travelled on average more by cleaner transport methods, predominantly walking or cycling, though they showed greater variation across the full range of available travel options. By contrast, staff show greater consistency in choice of travel methods but with a much greater tendency to drive to work individually, reflecting the convenience of the car (Ribeiro et al; 2020). Klockner and Friedrichsmeier (2011) suggested that the mode of transport chosen by university students was influenced by situational and psychological factors. They described situational factors as including the availability of infrastructure by mode, public transport accessibility, trip characteristics and cost, whereas psychological factors included the individuals' intentions, belief, norms and attributes. Whereas students, in smaller and medium-sized cities (at least), generally may have more consistent accommodation location (student rentals tend to be in the same area year to year and university provided accommodation is often closer to the academic campus), staff choice of housing is more flexible generally due to higher incomes and more stable lifestyles (Logan et al, 2020). Writing in a Sydney context Mulley and Reedy (2016) point out that for students, their socio-demographic profiles, including age and income, mean they have a tendency to be public transport users, particularly as they will also have more flexibility than other groups to change their residential location to minimise travel time and cost as they are less likely to have dependents or own property. This echoes the findings of other campus-based students which have shown student mode choice to be strongly influenced by demographic and physical factors as well as perception of available choices (see for example, Zhou et al., 2018; Sultana et al., 2018; Moniruzzaman and Farber, 2018).

Rissel et al (2013) conducted a study of how staff and students mode of travel to university can impact their physical activity level. Their results are drawn from an online survey of physical activity and travel behaviour at the University of Sydney generated 3,737 useable responses, 60% of which were from students. Four out of five respondents travelled to the University on the day of interest (Tuesday, November 30, 2012). The most frequently used travel modes were train (32%), car as driver (22%), bus (17%), walking (17%) and cycling (6%). Staff were twice as likely to drive as students, and also slightly more likely to use active transport, defined as walking and cycling (26% versus 22%). Overall, 41% of respondents were sufficiently active (defined by meeting physical activity recommendations of 150 min per week). Participants were more likely to meet physical activity recommendations if they travelled actively to the University.

Engelen et al (2019) describe the outcome of an online survey of travel behaviour and physical activity conducted at the University of Sydney which asked about travel behaviour on a specific day in September 2017. The survey questions were the same as those used in a similar online survey reported by Rissel et al (2013). In total, 4359 respondents completed the survey, representing 10.8% of staff and 4.1% of students. Approximately two thirds of survey respondents were students. Compared with 2012, there was an increase in active travel to the University in 2017 from increased walking and train travel. Trip lengths increased, with 68% of trips taking longer than 30 minutes in 2017. The amount of time spent in low–moderate levels physical activity increased between 2012 and 2017, potentially related to active travel behaviour. Corbett et al (2021) analysed the same dataset with a public health objective in mind. They investigated the difference in reported time spent walking in 10-minute bouts compared to reporting total walking time over the same period and found that participants reported spending more time in physical activity when reporting total minutes walked. Findings showed that significantly more

⁸ The University of Aberdeen, for example, runs a biennial staff and student travel survey: <https://www.abdn.ac.uk/about/documents/Travel2016.pdf>

walking is done across a week in short bursts of less than 10 minutes and provide evidence for future survey design when evaluating active travel (and other) interventions to promote walking.

Mulley and Reedy (2016) report on the 2015 Travel Survey of 11,900 students and staff at The University of NSW. Findings showed that 41.2% of staff and 13.6% of students travelled by private vehicle to the campus. This high level of car use (at the time) is partly explained by free parking in residential streets exist adjacent to the campus, low staff parking fees, public transport access times that do not compete well with the car, incomplete cycle networks and insufficient public transport services to serve the end of evening lectures (after 9:00pm).

Mulley and Reedy (2016) observe that as large trip generators for students, staff and visitors, universities generally encourage pedestrian-friendly, high amenity, sustainable campus environments which support public transport rather than car access. However, they observe that the travel plans and TDM for Universities have traditionally been primarily around the communication of options (see Tables 6 and 7 for a selection of web links on sustainable transport guidance) which they consider is unlikely to be as successful as compared to undertaking profiling and targeting transport demand measures.

In their review of TDM in a university context Logan et al (2020) cite examples of the implementation of 'pull' measures to increase the attractiveness of sustainable travel modes. In a study at Kyoto University students who regularly commute using private vehicles were given a free one-month bus pass. Findings demonstrated that frequency of bus use increased during the study period and car use decreased after the intervention period (Fujii and Kitamura, 2003). The Kyoto study suggests that even temporary changes may be important in influencing modal shift. Alternatively, 'push' measures encourage individuals to avoid individual car travel modes by making them less attractive through increased costs, or less convenient, e.g., via parking demand management (Sweet and Ferguson, 2019). An example would be to increase parking fees whilst simultaneously reducing the number of available spaces.

The influence of COVID-19

Caulfield et al (2021) describe a case-study developed for the re-opening of Trinity College Dublin (TCD), Ireland. TCD is located in the city centre and the University and city council have been working together to develop planning and built environment interventions to enable staff and students to safely return to work and education. A survey was conducted in June and July 2020 (n = 2653) to determine how staff and students would like to travel to TCD, when the campus fully reopens. TCD reopened on the 28th September 2020 with a blended learning approach; laboratories and tutorials all took place on the main campus and larger lectures were conducted online. The results of the study demonstrate a willingness to embrace active modes of transport when returning to the campus – 55% of the sample said they would like to walk or cycle when the campus reopens, compared to 26.4% who said they had walked or cycled prior to the pandemic. Staff and students expressed concern about using public transport to arrive at the campus and this is important due to the very high proportion using this mode pre-pandemic – 27% said that this would be their preferred mode when the campus reopens compared to 68% who said they used public transport prior to the pandemic. Caulfield et al (2021) recommend that the university and city work together to promote active modes of transport and enable remote learning and working to compensate for the reduction in public transport capacity.

In a recent commentary Ho and Habib (2022) suggest that concern over climate change has prompted universities to improve their sustainability performance by reducing emissions from transport through policy interventions promoting sustainable modes. They analyse the longitudinal mode choice over a 10-year period for students and staff at Dalhousie University and explore changes in travel behaviour caused by COVID-19. Students were more likely to walk or use public transport, while staff and faculty were most likely to use private vehicles. COVID-19 has resulted in most students reporting a shift to a new primary mode, with most opting to walk, despite a significant increase in travel distance to campus.

A study from Poland (Paradowska, 2021) explores the relationship between the experience of remote study introduced as a result of the pandemic and the resulting "deconsumption" of university commuting to explore whether telecommuting could form the trigger for implementing a sustainable mobility policy. The study investigates student's perceptions at two universities (404 respondents) of the advantages

and disadvantages of daily travel before the start of online learning. Respondents associated commuting to the university with more advantages than disadvantages and pedestrians and cyclists were most satisfied with their prior travel experiences. Most students expected to continue commuting using the transport modes they used prior to the pandemic. It is concluded that the pandemic provides an opportunity for universities and local authorities to implement policies and actions to support active commuting.

Ceccato et al (2021) report the outcome of a survey of 5385 and 1213 for students and staff at University of Padova in Italy which explored travel intentions in the “new normal” conditions in which people have greater flexibility over whether to travel or not. As with other studies perception of health risk plays a fundamental role in trip cancellation decisions, especially for public transport. Specifically, for both students and employees, the stated choice of future bicycle usage increased the probability of making the trip. It was also found that the promotion of bicycle use, bike sharing, car pooling and micro mobility among students can effectively foster sustainable mobility habits in the new normal. Several risk-mitigation interventions in work and study settings were found to reduce the probability of not performing the trip, i.e., free hand sanitizing gel at entry points for students, and mandatory face mask usage and body heat checks for employees.

Finally, a study from Greece by Mouratidis and Papagiannakis (2021) provides new evidence on changes in a range of online activities (telework, teleconferencing, e-learning, telehealth and e-shopping) due to COVID-19 which in turn have contributed to changes in urban mobility. Findings from a nationwide survey (April – May 2020) show that substantial increases in importance were reported for telework (31% increase), teleconferencing (34% increase), online learning (34% increase), and telehealth (21% increase). The incidence of daily online learners increased seven-fold. Mouratidis and Papagiannakis (2021) suggest that urban mobility in the post-COVID-19 era is likely to depend on the degree of prevalence and acceptance of these remote online activities since it seems that a significant part of mandatory and optional travel has been replaced by teleworking and other remote online activities. It remains an open question as to what extent the observed shift towards “soft mobility” can be maintained in the long-term.

The remainder of this section considers examples of TDM measures that have been introduced in university settings before reviewing a selection of sustainable transport plans.

Case studies

Stanford University – Bicycle Friendly University

Stanford University in Palo Alto, California is the only university to win the Platinum Bicycle Friendly University award in three consecutive years. It maintains this accolade because of its large number of bike-related programs and resources⁹. Stanford promotes cycling in many ways, such as by making route maps available, offering free bike safety classes, and providing repair stands. Stanford’s bike program includes numerous support programs for safe biking as well as making taking public transport with bicycles easier. Bike racks are available on all Stanford Marguerite buses (Figure 5). Staff and students can also rent or purchase a folding bicycle. Some highlights of Stanford’s Platinum bicycle program initiatives include:

- Removal of 100 car parking spaces and adding a mile of new bikes lanes, e.g., on Santa Teresa Street, a major east/west bikeway for students travelling between student residences and the core campus.
- Increased participation in Bike to Work Day. Since 2010, Stanford has increased participation in Bike to Work Day by 39%. Stanford now has more than 13,000 cyclists on campus every day.

⁹ <https://transportation.stanford.edu/maps-resources-access/sustainable-transportation/free-and-discounted-stanford-transportation-programs>

- Expanded department bike share programs. Twenty - one departments have Department Bike Share programs, offering a total of more than 130 bikes for staff use. The Stanford Bike Safety policy is incorporated in the “How to start a Department Bike Share Program Guide,” which is produced in partnership with Sustainable Stanford. This guide helps departments initiate their own programs to promote riding a bike for short, on-campus trips, wearing a helmet on every ride and following the rules of the road.



Figure 5: Stanford University shuttle bus with bike rack¹⁰

Tokyo Institute of Technology, Japan – free bus travel

In 2003, an experiment targeting 43 student drivers was carried out by the Tokyo Institute of Technology, in which a one-month free bus ticket was given to 23 drivers in an experimental group but not to 20 drivers in a control group. The goal was to shift their primary mode of travel from car to bus. The results showed that attitudes toward bus were more positive and that the frequency of bus use increased, whereas the habits of using the car decreased from before the intervention, even a month after the intervention period. The increase was 20% higher than the frequency of bus use before the intervention. Furthermore, the increase in habitual bus use had the largest effect on the increase in the frequency of bus use. The results suggest that a temporary structural change, such as offering car drivers a temporary free bus ticket, may be an important tool for converting car travel demand to public transport (Fuji & Kitamura 2003).

Discounted travel for staff and students

Massachusetts Institute of Technology (MIT) worked with Hong Kong’s Mass Transit Railway (MTR) in September 2014, to run an experiment to investigate if discounted fares can encourage more staff to travel using public transport (Halvorsen et al. 2016). Stanford University offers free and discounted transportation programs to support the mobility needs of its community. Free travel on AC Transit’s Line U East Bay express bus (with Stanford ID), Commute.org’s Redwood City-Midpoint Caltrain shuttle, and Stanford’s Marguerite shuttle are offered to all Stanford affiliates¹¹.

Measures to promote cycling – UCLA

Bike-share schemes that allow anyone to hire a bike for short trips, either from a docking station or using dock-less bikes, have multiplied dramatically in the past 10 years. A University can create its own bike-share program to provide staff, students, and visitors with an easy new option for making healthy, sustainable on-and off-campus trips. In October 2017, the University of California, Los Angeles (UCLA)

¹⁰ Source: <https://transportation-forms.stanford.edu/bike-platinum/>

¹¹ <https://transportation.stanford.edu/maps-resources-access/sustainable-transportation/free-and-discounted-stanford-transportation-programs>

launched Bruin Bike Share where cyclists can rent the bikes for (then) \$7 USD an hour or get 90 minutes of daily riding time. Membership was charged at \$7 per month or \$60 per year with a UCLA affiliation. Rates are slightly higher for visitors (Figure 6). Partnering with a private company to bring its bike fleet on and around campus may be more cost-effective.



Figure 6: UCLA staff on the launch day of Bruin Bike Share¹²

Comprehensive Mobility Services at UC San Diego

UC San Diego has recently announced (July 2021) a new five-year exclusive agreement with Spin, a micromobility provider, and TransLoc, a transportation software solutions company to deliver and integrate sustainable transportation modes¹³. This initiative will build bring 600 shared e-bikes and e-scooters to the campus, enhanced through a network of “Spin Hub” charging stations that include digital screens showing real-time campus bus location data.

One stop shop for Travel Information – Latrobe University

Mulley and Reedy (2016) note that communication plays a key role in the success of any TDM program or policy, what is communicated and how it is communicated does have a significant impact on the reception of TDM. One stop shops on campus are deemed an effective model and Latrobe University has an online one stop shop for Travel Information (Figure 7). Links to examples of university travel web pages can be found in Tables 7 and 8.

¹² Source: <https://newsroom.ucla.edu/stories/ucla-launches-bike-share-program>

¹³ <https://www.prnewswire.com/news-releases/university-of-california-san-diego-launches-comprehensive-mobility-services-powered-by-ford-owned-spin-and-transloc-301408424.html>



Figure 7: “Transport Central” at Latrobe University¹⁴

TDM initiatives at the University of Aberdeen

The University of Aberdeen in north-east Scotland has introduced a number of TDM initiatives over a 15-year period. Table 6 summarises the measures and classifies them according to “push” and “pull” initiatives.

‘Pull’ measures include improved cycling storage facilities (2006), a lift sharing scheme (2007), free inter-campus minibuses (2012) replaced with an extended externally contracted inter-campus shuttle bus service (2014), electric vehicle charging facilities (2017); ‘push’ measures include abolishing taxi travel claims between campuses (2012), parking permits and a reduction in the number of parking spaces (2009). TDM initiatives at the university were introduced and dovetailed with Aberdeen City Council who introduced paid non-residential on road parking around both campuses as condition to allow the university to obtain planning permissions for new buildings.

Logan et al (2020) undertook an assessment of these measures on the commuting behaviour of staff and students drawing on the findings of a regular biennial survey. Results showed that while these measures had minimal impact on the transport choices made by staff and students the survey did provide useful insights into travel behaviour that could be used to inform future sustainable transport planning. This study confirmed that a top-down approach towards implementing TDM initiatives may miss the influence of societal indicators such as the interactions between family caring roles and gender identities on travel behaviour which are important in determining effective implementation. Results indicate that even with the implementation of TDM initiatives, external factors, including the cost of fuel, may influence a reduction of car use. A more integrated approach between large institutions could help.

Table 6: Push and pull TDM initiatives introduced at the University of Aberdeen

Year	Push or Pull Initiative	Characteristics of TDM Initiative
2006	Pull: Enhancement of facilities for cyclists.	<ul style="list-style-type: none"> Covered and uncovered stands and lockers (650 as of 2018). Cycle lockers available for a deposit (Deposit has remained at £60 since 2006).
2007	Pull: Lift Sharing.	<ul style="list-style-type: none"> Dedicated web page linked to a nationwide scheme (liftshare.com)

¹⁴ Source: <https://www.latrobe.edu.au/transport-central>

		<ul style="list-style-type: none"> • 280 staff and student online users (2018) • Potential to save money (cost of vehicle, fuel and parking permits)
2009	Push: Annual Renewable Parking Permits.	<ul style="list-style-type: none"> • Priced at £220 (as of 2017). • Parking prices are reviewed annually as a direct measure against pay increases and inflation. • Limited Parking – A reduction of 261 available parking space to staff and students from the start of the survey period. (King’s College – 845 spaces with 61 disabled spaces and Forresterhill – 352 spaces with 23 disabled spaces) (as of 2017). • No guarantee of a parking space.
2012	Push: Abolishing Travel Claims for Taxi fares.	<ul style="list-style-type: none"> • Removal of eligibility for staff expense claims for Taxi fares between campuses. • Only for exceptional circumstances (for example disabilities and where a staff member has no other option).
2012	Pull: Inter-campus Minibus and Shuttle Service for staff and students.	<ul style="list-style-type: none"> • Free for both Staff and Students on production of university ID card. • Regular service throughout the day. • Door to door service.
2014	Pull: Externally contracted Inter-campus shuttle bus for staff and students (including halls of residence to Kings College (0.9 miles)) to replace the minibus.	<ul style="list-style-type: none"> • Free for both Staff and Students on production of university ID card. • Regular service throughout the day. • Door to door service. • Branded logo for service. • Sheltered bus stops.
2017	Pull: Electric charging facilities at King’s College and Forresterhill Campus.	<ul style="list-style-type: none"> • Two charging points at each campus • No charge for electricity. • No parking permit is required when the vehicle is charging.

Fleet management and decarbonisation at The University of Sydney

The University of Sydney (USYD) has a fleet of more than 200 vehicles available for use by University staff, including cars and trucks. Fleet management at USYD currently sits under Campus Infrastructure Services (CIS), which sources and maintains fleet vehicles through an external fleet management provider (Custom Fleet). Most University vehicles are pool vehicles available for staff booking through PoolCar.com.

USYD is at an early stage on its fleet decarbonisation journey and is currently focused on increasing fleet efficiencies and vehicle utilisation by rolling out the pooled vehicle system, replacing fleet vehicles with ones that are consistent and fit-for-purpose, and reducing the total number of vehicles. The priority is to centralise the management of all University vehicles, after which it will be in a much better position to change policy towards sustainable mobility. A case study is included as Appendix 1.

USYD previously had a fragmented approach to vehicle ownership and management. Vehicles were not shared units at the University and each Faculty owned their own vehicles with no uniform standards in place. Individual Faculties were tasked with vehicle purchases assisted by Procurement Services,

and while a policy was in place to replace vehicles after 4 years or 80,000 kms, it was not always enforced.

To-day the fleet management function is outsourced to an external fleet management provider (Custom Fleet), which centrally manages all the registrations, maintenance and servicing, fuel management, toll management, and purchase and sale of vehicles based on Faculty requirements. There is a permanent onsite fleet manager from Custom Fleet reporting to the CIS Contract and Commercial Manager, who manages the pool vehicles. Each University pool vehicle is supplied with a driver guide, e-toll tag, parking permit and first aid kit. Telemetry is installed into all University pool vehicles which automatically records the km driven for each trip. The University uses the PoolCar.com platform to manage all its pool vehicle bookings. Staff can access the booking system through the PoolCar.com website. Users are charged km rate, day rate or hour rate to use the vehicles. Pool vehicle sites have been rolled out across the main campus where parking is restricted and some satellite and remote sites.

The University (at May 2019) has a total of 201 motor vehicles (cars and trucks) in its fleet, with 81 of them pool vehicles. Over the past 3 years, 66 of the pool vehicles were migrated as part of the initiative and 54 are now leased through Custom Fleet, meaning there will be no future replacement fees for them. There are now 16 pool vehicle sites across University campuses, and pooled vehicles are becoming business as usual at the University. The initial business case for the centralised pool system had the (then) vehicle utilisation at 60% because of the lack of reliable data and the need to be conservative in the modelling. While CIS does not encourage staff to drive more, it does encourage staff to use the pool vehicles whenever they do need to drive. As a result, vehicle utilisation at the University now averages at 70-75% by site and by season as estimated by CIS.

University Sustainable Travel Plans

This section reviews selected university sustainable travel plans and (where available) return to campus plans developed to encourage COVID-Safe Travel in a university context. The review and evaluation of plans ensures coverage across NSW and across Australia by reference to activities at other Go8 universities.

Tables 7 and 8 provide a summary of university travel planning at a selection of universities in Sydney and across the Go8 (at September 2021). Further details of supporting documentation underpinning the approach to sustainable travel planning at each university are provided in Appendix 2.

Table 7: University travel planning – selected universities in Sydney

University	Sustainable Travel Plan (date)	Travel Survey	Return to Campus Plan	Sustainable Transport Guidance for the university community (URL)
USYD	✓ (2015)	✓ (2012, 2017, 2021)	✓	http://sydney.edu.au/campus-life/getting-to-campus.html
UNSW	(✓) (part of Environmental Sustainability Plan – 2019)	✓ (2015, 2019)	✓ (web summary)	http://www.facilities.unsw.edu.au/getting-uni
Western Sydney	?		✓ (web summary)	http://www.westernsydney.edu.au/campuses_structure/cas/campuses/getting_to_uni
University of Technology Sydney	✓ (2013)	✓ (2008, 2018)	✓ (web summary)	http://www.uts.edu.au/current-students/managing-your-course/your-student-info/student-id-cards/travel-concessions

				http://www.uts.edu.au/sites/default/files/uts-tag.pdf (brochure)
Macquarie University	(✓) (part of 2009 Concept Plan)	✓ (2017, 2020, biennial)	✓	http://www.mq.edu.au/about/contacts-and-maps/getting-to-macquarie (includes link to 2020 Travel Survey Report)
University of Wollongong	(✓) (part of 2016 – 2036 Campus Master Plan) + separate Transport & Access Action Plan	✓ (2015, 2019)	✓ (web summary)	https://www.uow.edu.au/about/locations/wollongong/getting-to-campus/ (includes COVID-19 travel advice and a downloadable transport access guide)

Table 8: University travel planning – Go8 universities (not including USYD and UNSW)

University	Sustainable Travel Plan (date)	Travel Survey	Return to Campus Plan	Sustainable Transport Guidance for the university community (URL)
University of Melbourne	✓ (2020) (web summary only)		✓ (web summary)	https://about.unimelb.edu.au/news-resources/campus-services-and-facilities/transport-and-parking https://sustainablecampus.unimelb.edu.au/transport
Australian National University	(✓) * Only web summary with targets to satisfy by 2020		✓	https://services.anu.edu.au/campus-environment/transport-parking https://services.anu.edu.au/campus-environment/transport-parking/catching-the-bus
University of Queensland	(✓) (2016 to 2020) part of Sustainability Action Plan		✓	https://my.uq.edu.au/information-and-services/maps-parking-and-transport/public-transport
University of Western Australia	✓ (2020) (also part of 2021 UWA Green Impact Program)	✓ (2019)	✓ (web summary)	https://www.transport.uwa.edu.au/
University of Adelaide	(✓) Sustainability plan including transport (2016-2020)	✓ (2011)	✓ (web summary)	https://www.adelaide.edu.au/infrastructure/services/transport
Monash University	(✓) Part of Sustainability Strategy	✓ (annual?)	✓ (web summary)	http://www.monash.edu/people/transport-parking

Evaluating Sustainable Travel Plans

To aid a comparative review of selected sustainable travel plans an evaluation template was developed (Table 9). An annotated version of the template, which was developed from a TfNSW Travel Choices Travel Plan Summary template, is included in Appendix 3¹⁵.

Table 9: University Sustainable Travel Plan Evaluation template

Institution / Title of plan / date of preparation
<ul style="list-style-type: none">• Does the Travel Plan address a clear statement of needs?• Is the Travel Plan context clearly stated?• Is there a description of the current and / or future situation?• Is there a clear Travel Plan Management and Engagement strategy?• Are anticipated Travel Plan Outcomes clearly articulated?• Are Travel Plan Impacts identified?• Are Travel Plan Outputs identified?• Have Travel Plan Activities been identified?• Are Inputs and Travel Plan Resourcing adequately covered?• Is there a proposed Monitoring and Reporting process?

Sustainable Transport initiatives at The University of Sydney (USYD)

The current Sustainable Transport and Mobility Plan or STAMP (University of Sydney, 2015)¹⁶ was prepared in 2015 and is being refreshed in 2021. The University of Sydney is a community of ~60,000+ students and staff spread across 10 campuses with most activity in Camperdown/Darlington (C/D).

The main objectives of the STAMP are to:

¹⁵ Templates were completed for USYD, UNSW, UTS, MQU, UOW, UQ and UWA.

¹⁶ <https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSD-7081%2120190227T095318.606%20GMT>

- a) increase public transport and active travel uptake by staff and students
- b) improve health outcomes of students and staff living close to the University through active modes of transport
- c) manage car parking demand through appropriate pricing
- d) reduce vehicle movements through the University to improve amenity and ease congestion
- e) consider social equity requirements of community members with specific car parking, transport and mobility needs
- f) provide accessible, affordable and quality active transport infrastructure
- g) improve connections to the city's bicycle and public transport networks
- h) reduce vehicle carbon emissions by avoiding travel where possible
- i) promote staff telecommuting
- j) monitor, measure and report on staff and student travel patterns

The STAMP complements the Campus Improvement Plan 2015-2020 which aims to improve campus liveability, accessibility and connectivity by providing staff and students with economic choices and incentives to adopt more sustainable travel. It is also consistent with the University's 2015 Environmental Sustainability Policy's (University of Sydney, 2015¹⁷) objective to "promote sustainable transport and mobility, through: (a) providing quality infrastructure and facilities to support active transport; (b) encouraging and supporting the use of active transport and public transport; and (c) using communications technology to minimise business travel." Based on this policy, Campus Infrastructure and Services (CIS) are responsible for "incorporating active transport and public transport requirements in master and precinct planning, and the design of major new building projects". The University of Sydney's Sustainability Strategy includes targets to include active travel modes to and from the campuses (Figure 8). The STAMP also complements the Flexible Working Arrangements Policy.

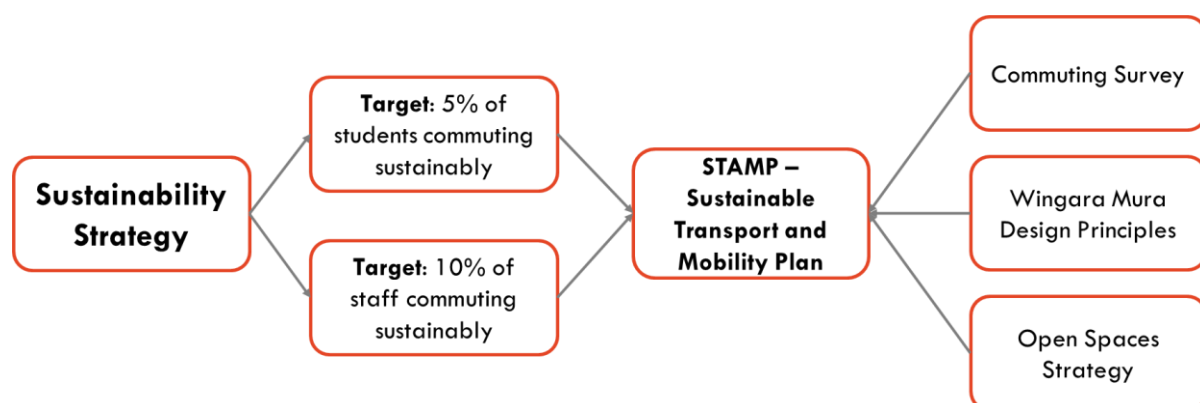


Figure 8: Sustainability Strategy and STAMP

The STAMP incorporates a comprehensive statement of Federal, state and local governments' drivers and policies (e.g., NSW bike plan which looks at how LGAs can implement strategies to benefit cyclists at major locations such as universities and public transport hubs) and The City of Sydney Cycle Strategy and Action Plan).

¹⁷ <https://www.sydney.edu.au/policies/showdoc.aspx?recnum=PDOC2015/389&RendNum=0>

A strong feature of the USYD approach is the underlying evidence base on travel behaviour. As noted in the literature review above there have been two previous studies of how staff and students travel to university and the impact on their physical activity level (Rissel et al., 2013; Engelen et al., 2019 and Corbett et al., 2021). The 2012 survey of physical activity and travel behaviour was conducted to inform planning of physical activity and active travel promotion programs at the University of Sydney as part of the “Sit Less, Move More” sub-committee of the Healthy University Initiative. The outcome of the 2012 survey directly informed the development of the STAMP and a refresh survey was conducted in 2021.

The 2021 study focused on the determinants of travel mode choice and the psychological and behavioural correlation of car vs. non-car use. The Survey on Commuting was launched on Tuesday, April 20, 2021, and actively promoted in person throughout all three days of EnviroWeek and online for two weeks among staff and students. The survey asked about travel behaviour on Tuesday, April 20th. The survey questions were adapted from those used in the 2012 online survey. In total, 860 respondents completed the survey. 65.4% were reported as staff and 35.9% were reported as student. Figure 9 shows a snapshot of travel activity (April 2021) and Figure 10 includes feedback from participants. Table 10 shows how car use has increased at the expense of public transport as a result of the pandemic, thus mirroring experience nationally (Beck et al, 2021).

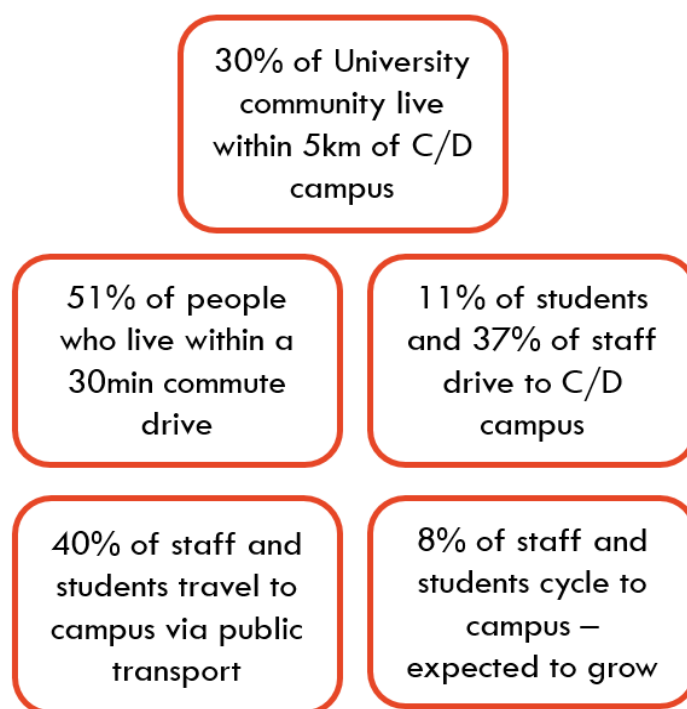


Figure 9: Snapshot of travel activity at USYD (April 2021)

Note: C/D = Camperdown / Darlington campus

Table 10: Main mode of travel to the university in 2012, 2017 and 2021

	2012		2017		2021	
	n	%	n	%	n	%
Walk	500	16.6	865	23.0	142	17.1
Bicycle/skateboard/scooter	194	6.4	212	5.6	62	7.5
Train/light rail	954	31.6	1336	35.5	193	23.3
Bus	515	17.1	640	17.0	103	12.4
Car/motorcycle	825	26.7	665	17.5	229	27.6
Other*	28	0.9	45	1.2	100	12.0
Total	3016		3763		829	



Figure 10: “What pedestrians are saying” in 2021

The STAMP proposes a range of strategies for consideration by the University to improve transport accessibility, equity, connectivity and environmental sustainability (see for example, Figure 11, below) although no specific targets are included (it is noted that this has now been remedied, see Figure 8).

Objective Measure	Actions for Implementation	Accountability Area	Timeframe
Policy Reform			
1. Include sustainable transport & mobility in relevant University policies	a. Include sustainable transport objectives, accountabilities and responsibilities in the University Environmental Sustainability Policy.	Sustainability sub-committee (as proposed by the Environmental Sustainability Policy effective from June 2015)	2015
	b. Establish a sustainable transport work group to develop, review and recommend relevant sustainable travel initiatives for endorsement by FIC & SEG		
	c. Improve communication and engagement about Telecommuting policy and its implementation.	HR	2016 – 2017

Figure 11: Extract from the strategies proposed in the STAMP

Strategies are identified for the following areas:

1. Policy Reform
2. Financial Instruments
3. Finance sustainable transport programmes
4. Infrastructure
5. Reduce vehicle traffic through campus
6. Improve campus cycleway and signage
7. Construct more campus student accommodation

8. Collaborate with TfNSW for improved public transport services
9. Improve cycleway connectivity with surrounding Councils
10. Reduce car parking demand
11. Reduce business-related motor vehicle and flight travel
12. Promote Telecommuting
13. Marketing & Communications
14. Measure & Monitor
15. Promote more distance / learning education

In the current revision of the STAMP (due by December 2021) the previous plan (2015) is used as a basis and a sustainability lens applied. The sustainability team are seeking to take account of the impact of COVID-19 by consulting with the university community (see Figures 9 and 10) and working with architects and academics on initiatives on a range of TDM initiatives (Figure 12).

Cycling	Public Transport	General
<ul style="list-style-type: none"> – Installing more end of trip facilities and bike repair infrastructure – Increase internal cycle lanes – Providing information on getting from home to campus via cycleways 	<ul style="list-style-type: none"> – Better information on bus routes and how can we stream live info? – Improving shuttle routes and visibility to join links between Redfern and Central stations to C/D campus – Support post-COVID return to campus commuting 	<ul style="list-style-type: none"> – Reducing number of parking spaces on C/D campus – Improve accessibility for community with disability (DAP) – Activate open spaces across campuses – Electric Vehicle infrastructure – Salary sacrifice for EVs

Figure 12: Potential TDM plans for 2022

Sustainable Transport initiatives at the University of New South Wales (UNSW)

UNSW does not have a publicly available freestanding sustainable travel plan. Travel and Transport forms part of the Environmental Sustainability Plan 2019-21¹⁸ which sets out high level plans, and there is a brief update in the Environmental Sustainability Report 2020 which includes, for example, the pop-up cycle ways recently installed by TfNSW adjacent to the main Kensington campus as part of the response to COVID-19.

A key commitment within the Plan is to “ensure our campuses are easily accessible by multiple transport modes and our community is supported to make active and sustainable transport choices”. Measures identified to improve key connections to, from, and through the campuses include improvements to pathways, wayfinding, policies and key infrastructure upgrades. The population on campus on a typical day is over 30,000 people.

Relevant key stakeholders include local and state government as well as the local community. The 2020 progress Report notes the opening of the L3 Kingsford Light Rail Line on 3 April 2020 and comments that light rail is one of the most significant pieces of infrastructure to benefit the University in its 70-year history with the provision of a high capacity, clean, reliable and sustainable transport option for staff and students. Together with the L2 Randwick Line opened in 2019, light rail now services the upper and lower ends of UNSW’s Kensington campus. As a response to COVID-19 Transport for NSW

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<https://www.sustainability.unsw.edu.au/sites/default/files/documents/190925%20EnvironmentalSustainabilityPlan.pdf>

announced that it would install pop-up cycleways on Todman Avenue, Kensington and High Street, Randwick. UNSW has advocated for segregated cycleways in the local area, including on High Street, for many years. With COVID-19 there was a substantial reduction in commuting and travel on University business, which led to emission reductions and an associated increase in the use of virtual working practices and collaboration. A reduction in travel on University business saw greenhouse gas emissions from air travel reduced by over 27,000 tonnes of carbon dioxide equivalent, or 94 per cent, compared to 2019.

There is a strong governance and reporting framework for environmental sustainability in the Plan with key activities and responsibilities identified (Figure 13). A small number of activities are identified:

- Develop a Campus Transport and Accessibility Plan
- Provide secure bicycle storage and end-of-trip facilities in key campus locations
- Establish processes to measure and offset business travel carbon emissions
- Identify and evaluate opportunities to expand AV and VC facilities and promote these as an alternative to travel

FOCUS AREA	ACTIVITIES	RESPONSIBILITY
Travel & Transport	• Develop a Campus Transport and Accessibility Plan	Executive Director, Estate Management
	• Provide secure bicycle storage and end-of-trip facilities in key campus locations	Executive Director, Estate Management
	• Establish processes to measure and offset business travel carbon emissions	Head of Environmental Sustainability
	• Identify and evaluate opportunities to expand AV and VC facilities and promote these as an alternative to travel	Vice-President, Finance & Operations
Engagement & Integration	• Develop a sustainability communications plan and engagement program	Head of Environmental Sustainability & Internal Communications Manager
	• Complete a survey to measure engagement levels and priorities of the UNSW community	Head of Environmental Sustainability
	• Develop comprehensive data monitoring, collection and reporting procedures	Head of Environmental Sustainability
	• Complete an annual review and progress report outlining progress against the commitments, targets and actions in this Plan	Head of Environmental Sustainability
	• Report annually on the progress of activities to the Sustainability team	Action Owners

Figure 13: Roles and Responsibilities – Travel and Transport

The principal targets identified in the Plan are to increase the percentage of staff and students commuting by active travel modes to 20% by 2022 and reduce air travel emissions by 1% by 2022. Progress towards these are included in a target status dashboard included in the Environmental Sustainability Report 2020 (see Figure 14). The Plan notes that during 2018 103 new bicycle spaces plus six repair stations and pumps were added, bringing the total to around 900 spaces in the Kensington campus.

The Plan contains no information about resourcing the measures.

Focus area	Target	Definition	Performance			Status
			2018	2019	2020 ¹⁰	
Travel & Transport	Increase the percentage of staff and students commuting by active travel modes to 20 per cent by 2022	Staff and students walking or cycling as main travel mode (%)	16%	25%	-	○
	Reduce air travel emissions by 1 per cent by 2022	Tonnes of carbon dioxide equivalent (tCO2e)	23,595	25,958	1844	○

Figure 14: Target status summary – Travel and Transport

The 2020 Report notes that in several cases, 2020 target performance was affected by reduced campus activity, travel and expenditure in response to the COVID-19 pandemic. These changes mean that, for some targets, 2018 may no longer be a representative baseline. For transparency, where 2020 performance against individual targets appears to have been enhanced by COVID-19 impacts, they note that this has been explained as clearly as possible.

As with USYD there is a prior evidence base of staff and student travel behaviour with surveys in 2015 (see Mulley and Reedy, 2016) and 2019 survey¹⁹ although this is not mentioned in the Plan. In 2019, the total number of respondents was 6,226 and the survey was conducted from 21 October to 13 November 2019. Respondents comprised 54% staff; 44% students and 2% visitor.

Figure 15 shows how the number of students and staff driving to campus has declined since 2011 (and is now at an historic low) which is aligned to the UNSW Environmental Sustainability Plan commitment to support the community in making active and sustainable transport choices.

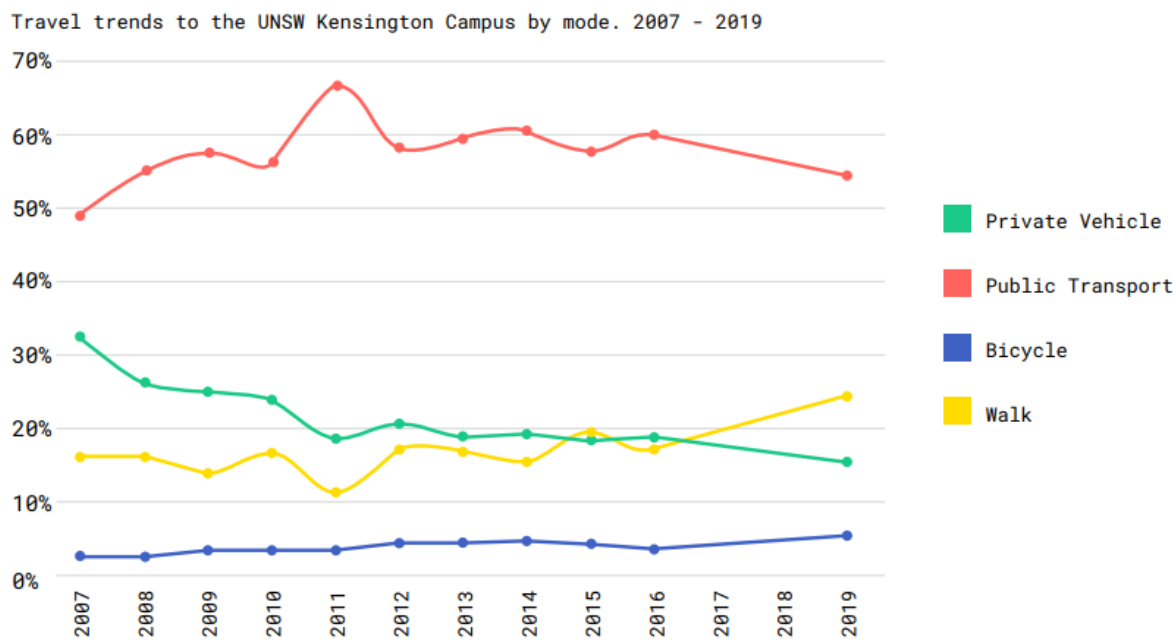


Figure 15: Travel trends to the UNSW Kensington Campus by mode, 2007 – 2019²⁰

In 2019 over 14,000 trips per day were on the UNSW express bus services although this will have changed following the opening of the Light Rail to UNSW. A high number of staff and students walk to campus (over 20% of total trips) which has increased from 12% in 2016. This reflects that people are living closer in the local community. Improvements to walking and cycling paths have provided further opportunity for people to use more sustainable modes of travel.

Figure 15 shows that cycling accounts for 6% of total daily trips and this has increased from less than 4% in 2016. The UNSW Bicycle Masterplan has helped drive this increase through the installation of more bike racks on campus, bringing the total number of racks to just under 1000.

Sustainable Transport initiatives at University of Technology Sydney (UTS)

The most recent plan was developed in 2013²¹ and is discussed below. The results of a 2018 staff and student travel survey are shown in Figure 16. The high use of public transport is evident – 72% of staff and 84% of students use a form of public transport as their main mode and this is largely explained by the central location of the main campus which has little onsite car parking. The wide geographical catchment area of UTS is evident from Figure 16.

¹⁹ <https://www.estate.unsw.edu.au/news/2019-travel-survey-results>

²⁰ Source: UNSW Travel Survey, 2019

²¹ <https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSD-7081%2120190227T095318.606%20GMT>

University of Technology, Sydney - Staff and Student Travel Survey Results (May 2018)

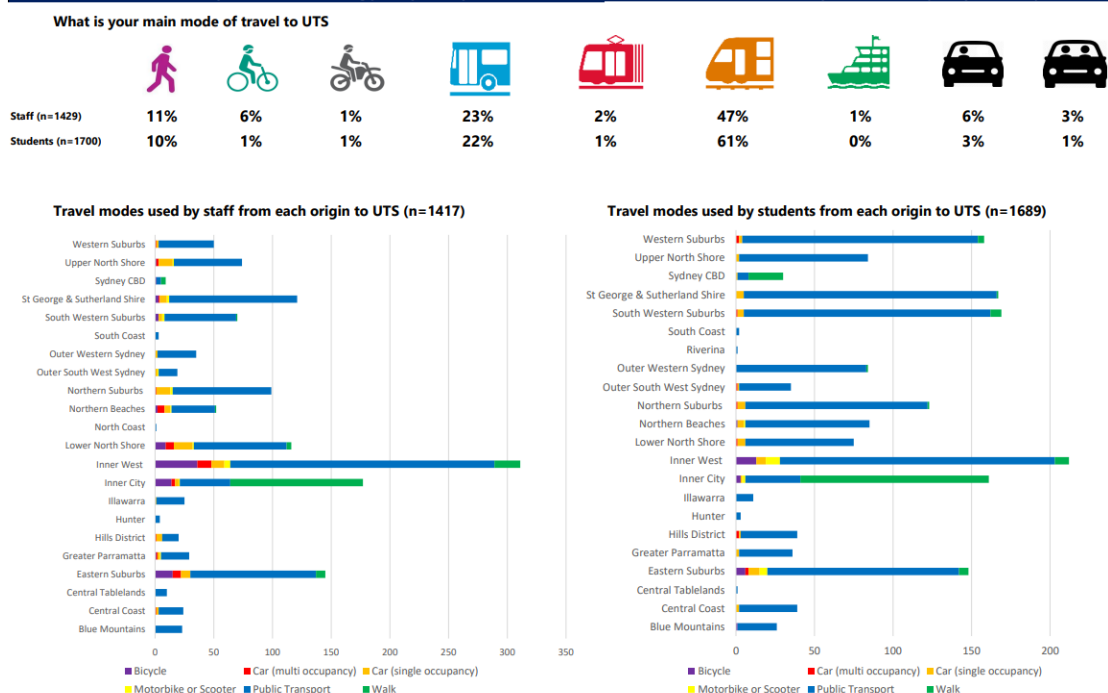


Figure 16: UTS staff and student travel survey, 2018

The Sustainable Transport Plan, 2013-2020 is well organised (see Figure 17 for the table of contents). In terms of a statement of needs the STP discusses the need for building more bicycle facilities (according to the 2018 survey bicycles are more popular amongst staff and students), as well as a pedestrian road between Central station and the University. Given the central location there is relatively low use of car in their base scenario (2008) when 19% of staff and 7% of students drove to the City. As stated in the STP: “A major objective of this Sustainable Transport Plan is to reduce the number of people driving. The Plan sets a target of under 10% of staff and 5% of students travelling to UTS City Campus by car in 2015.” According to the 2018 survey (Figure 16) this has been realised.

In 2008, 10% of staff and students walked to UTS and 6% cycled. The Draft UTS Cycling Strategy, developed in 2011, recommended an objective that by 2015 the mode share for active transport should be about 25% (this has not yet been realised). A goal was established to provide cycling facilities to 10% of the maximum number of people that are on campus at the same time.



Figure 17: Sustainable Transport Plan, 2013-2020: Table of Contents

The STP demonstrates good awareness of local and State government initiatives and there is evidence of collaboration with the City of Sydney to improve pedestrian and cycling access around UTS (e.g. City of Sydney Council Cycle Strategy and Action Plan) and the City of Sydney Development Control Plans, which state that tertiary institutions should provide one bicycle parking space for every 10 students/staff. This external collaboration is a strong feature of this STP. Other relevant initiatives include the (then) new Circular Quay to Randwick light rail line and the extension of the existing Lilyfield service to Dulwich rail lines, both walking distance from UTS. This will improve the access from the eastern suburbs and inner west, respectively.

Key actions initiated and reported in the STP include:

- Bicycle facilities: external and internal parking facilities, showers and lockers.
- Carpooling: In the cases where public and active transport is not available, UTS provides a free carpooling service.
- Car Parking: Limited for staff/students in City and Haymarket campuses.
- Travel and Access Guides: small documents (wallet or pocket size) that provide practical details about travelling to and from a site such as a school, hospital or large workplace. They provide details about public and active transport and carpooling services to the City Campus²².
- Ride to work day: UTS takes part of the annual Ride to Work day by running its own Ride to UTS day.
- Video conferencing and tele-working: reduces the need to travel to work
- UTS vehicles: 3 Prius Hybrid vehicles available for staff to use for work related travel.

²² <http://www.uts.edu.au/sites/default/files/uts-tag.pdf>

Committed actions include:

- Cycling: Improving cycling facilities and bike parking. The Building 10 bicycle hub: a new bicycle hub is being built which will feature 250 parking spaces as well as new showers, change rooms and lockers, and a new stairwell. They mention that if the demand is high then by 2020 the parking spaces will be increased to 576.
- Cooperation with City of Sydney on the Broadway Link Project, which aims to increase pedestrian amenity and cyclist safety in the Darlington, Chippendale and Ultimo areas. UTS has been involved in the design of “The Goods Line”, a linear park that will run from the Devonshire Street pedestrian tunnel to Darling Harbour and provide improved pedestrian and cyclist access between Central Station and Darling Harbour and UTS.
- Develop a carbon-offset policy for work-related flights
- Collaborate with TfNSW in the development of Opal card, possibly providing discounted long term public transport tickets for UTS staff and students.

Responsibilities for the UTS activities required to achieve the targets stated above are not identified in the STP. There is no indication of resource requirements in the travel plan.

Sustainable Transport initiatives at Macquarie University (MQU)

Transport forms part of the MQU Concept Plan (2009)²³ which is designed to provide for a structured and staged growth of the University Campus. The Concept Plan was the foundational work for the Campus Master Plan (2014)²⁴ which provides a general framework to guide and assist the University in its decision making around future development of the campus. Macquarie University’s main campus is located 15 kilometres from Sydney’s city centre in North Ryde and is described as one of the largest business and technology precincts in the Southern Hemisphere. MQU is adjacent to Macquarie Park, a large business park, which when measured by economic output, is New South Wales’ second biggest business district, after the City of Sydney. Macquarie Park is home to a world-leading research hospital, one of NSW’s biggest shopping centres, a cluster of bio and med tech companies plus leading employers like Downer, Novartis, Foxtel and Optus.

The underlying transport objective of the MQU Concept Plan is to increase the use of public transport, walking and cycling to/from and within the Macquarie University area. A biennial travel survey is carried out at Macquarie University the most recent being in 2020 which also included questions on preferred future patterns of work²⁵. Results show that “drive alone” to campus has dropped from 45% (2017) to 37% (2020) while in the same period use of public transport to access campus has increased from 33% to 39%. Use of active modes has increased from 5% to 12%. MQU benefits from being part of Connect Macquarie Park & North Ryde which commenced in 2013 has worked to increase accessibility, improve amenity and grow Mac Park without growing congestion; this includes a strong focus on implementing TDM measures.

²³<https://staff.mq.edu.au/support/office-and-property-services/property-services/property-planning-and-management/concept-plan>

²⁴https://staff.mq.edu.au/support/office-and-property-services/property-services/property-planning-and-management/property_masterplan_2014.pdf

²⁵https://www.mq.edu.au/_data/assets/pdf_file/0007/1175227/2020_MQU_Travel_Survey_Presentation_reducedfilesize.pdf

Travel Mode Over Time

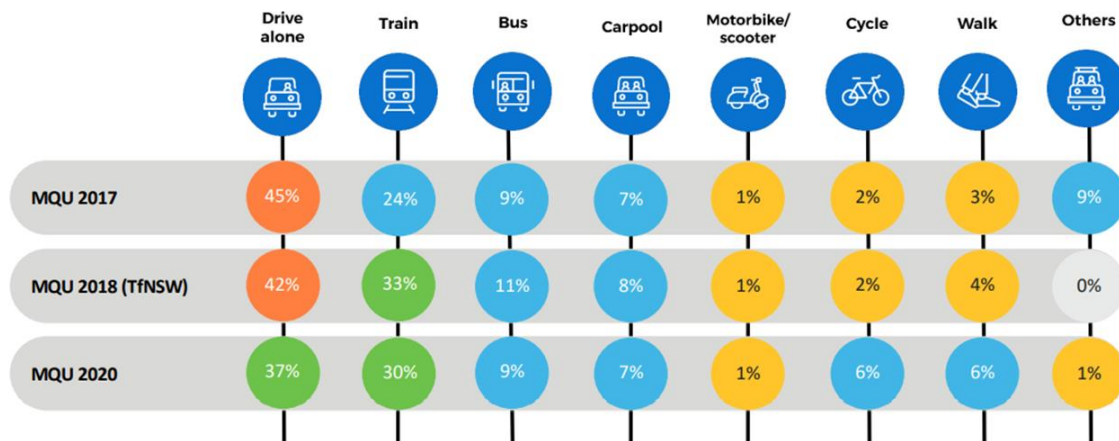


Figure 18: Macquarie University Travel Survey (July 2020)

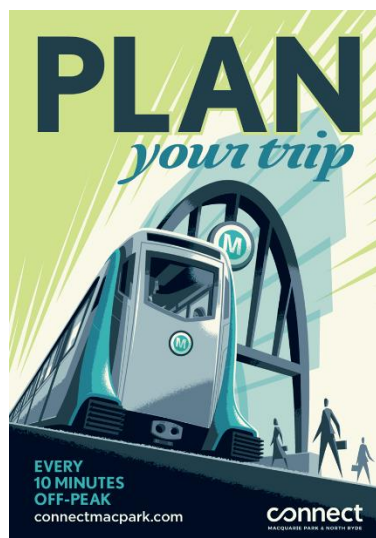


Figure 19: Publicity materials for Macquarie University Metro Station

The Concept Plan contains a detailed Transport Management and Accessibility Plan (TMAP) with the following components:

- Assess roads and their use (if car, bus, mixed, or pedestrian/bicycle only) to address internal circulation speed limits on secondary access roads and introduce a number of share-ways where pedestrian mobility dominates and vehicular access is limited (speed limit of 10km/hr).
- Restrict car parking. The Concept Plan proposes to consolidate car parking within four parking structures located adjacent to the four primary entry roads, so as to limit unnecessary vehicle penetration through campus. These will be metered parking spaces available at specific times and will provide short-term parking close to the university, and convenient surveillance for students walking to or from the railway station and car parking structures.
- Improved bus and rail services: Bus services are identified as essential in the role of providing sustainable transport choices and the university is concerned that bus priority should not be at the expense of pedestrian/cyclist safety. The Station Link service operated during the period between

the upgrade of the Macquarie University Railway Station (opened in February 2009) which closed in September 2018 for seven months for conversion to the Metro (Figure 19).

- Various types of TDM measures are covered in the TMAP with the aim to encourage more long-term sustainable transport for the Campus. Measures identified include:
 - Establishment of a Travel Smart Program
 - Improved travel information
 - Formalised carpooling and car sharing
 - Encouragement of travel passes for students and staff
 - Appropriate levels of parking pricing
 - Intra-University travel
 - Options for home-study
 - Review of lecture times

The TMAP is less strong on identifying quantified outcomes with only one specific target being mentioned: Reduction in the total number of car spaces for Academic purposes for the existing 4,636 to 4,095 so as to promote the 40% mode split towards public transport usage. Costed plans for specific activities are not included and there is no statement of roles and responsibilities or proposed monitoring activities.

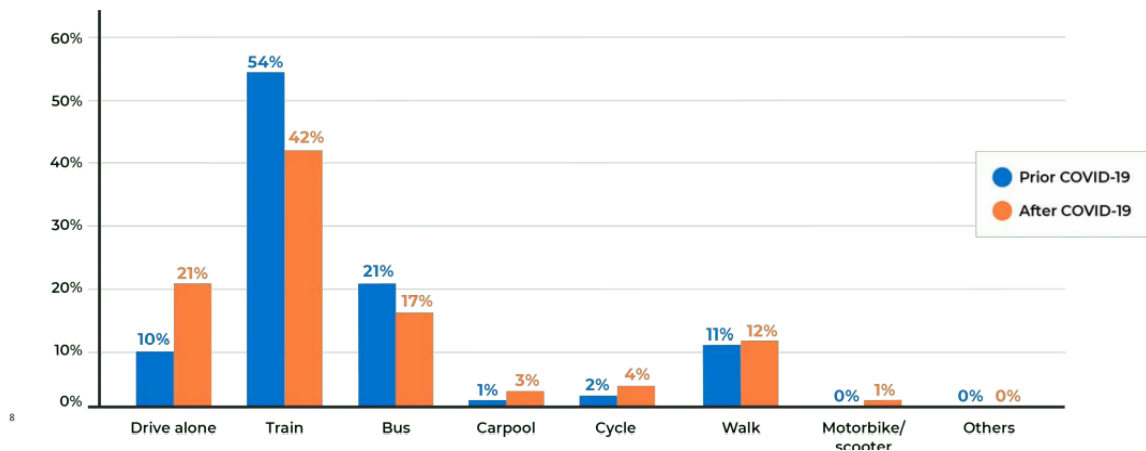
The Campus Master Plan identifies sustainability “impacts”, but these are not quantified.

- Increased mode shift to public and active transport
- New end of trip facilities and signage for cyclists
- Cycle skills training workshops delivered
- Pilot bicycle fleet on campus
- New shared pedestrian and cycling user path network for the campus, to ensure safe and continuous paths and to improve mobility across campus by connecting east and west precincts to Macquarie University Station
- Promotion of active transport modes on campus, for example, fitness trail
- Increased shuttle bus frequency

The 2020 travel and work survey included questions related to the impact of COVID-19. Mirroring the national trend there has been a move away from public transport in favour of single occupancy trips made by car for both students and staff, although this is more pronounced for staff.

Student travel mode before and after COVID-19

Convenience (72%), time (44%) and cost (39%) are the top 3 factors influencing choice of travel mode. Concerns around COVID-19 impact the travel choice for 19% of commuters. Employees and students prefer to drive primarily due to convenience (75%) and time (61%).



Employee travel mode before and after COVID-19

Employees say they will drive more when COVID-19 restrictions ease (+6%) – this is consistent with Connect’s recent COVID-19 survey of employees across the rest of Macquarie Park (+7%)

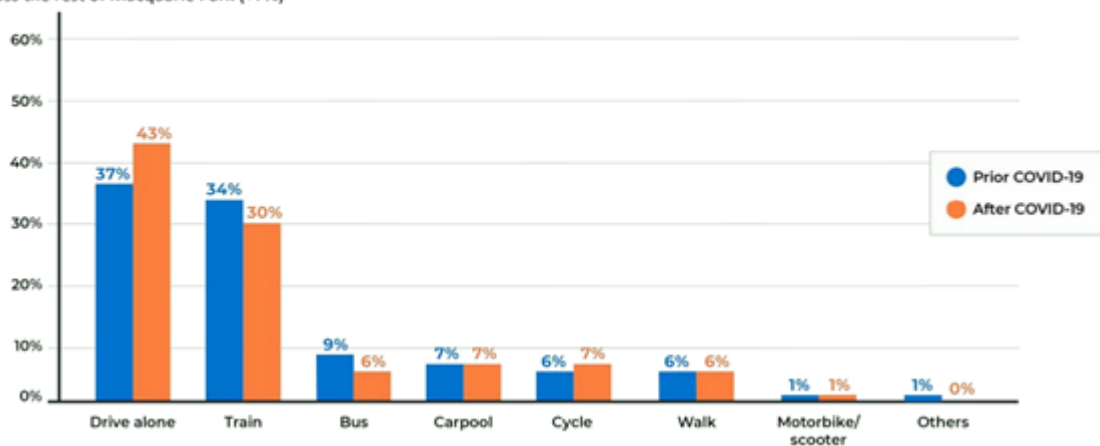


Figure 20: Student and staff travel mode before and after COVID-19

Sustainable Transport initiatives at University of Wollongong (UOW)

Transport forms part of the UOW Campus Master Plan (2016-2036)²⁶ which was prepared in 2016. There is a separate Transport and Access Plan (2019-2021) and progress reports (2019 and 2020) which are available online²⁷. These documents and strategies were all prepared pre-COVID and the latest progress report (2020) highlights the changes to travel due to the pandemic.

The main campus population (2016) includes 17,080 equivalent full-time student load (EFTSL) and is expected to grow to 20,310 EFTSL by 2036. Upgrades to the sport precinct and other facilities is expected to increase the user base of the campus and include neighbourhood residents and general

²⁶ <https://documents.uow.edu.au/content/groups/public/@web/@pmcd/@smc/documents/doc/uow220188.pdf>

²⁷ <https://www.uow.edu.au/about/locations/wollongong/getting-to-campus/strategy/>

public. Around half of the university population lives within 10 kms of the campus. Figure 21 gives a transport snapshot for 2015.

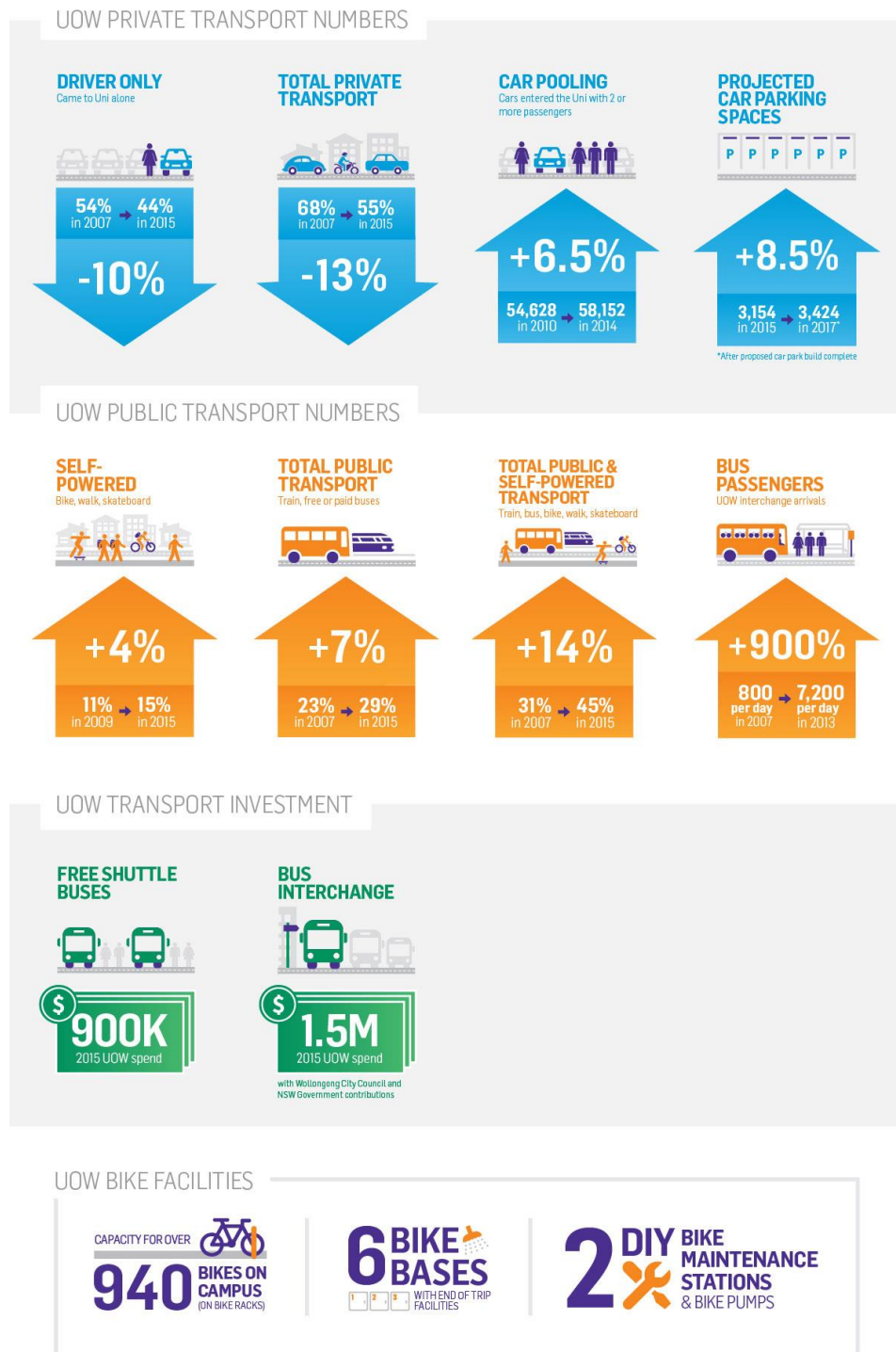


Figure 21: Transport snapshot - University of Wollongong (2015)²⁸

²⁸<https://www.uow.edu.au/media/2015/bold-transport-plans-to-smooth-the-path-for-campus-expansion.php>

The Campus Master Plan relates to the principal campus in Wollongong and contains a clear statement of needs and actions for access and sustainability (Figure 22).

**Concept summary:
Access and sustainability**

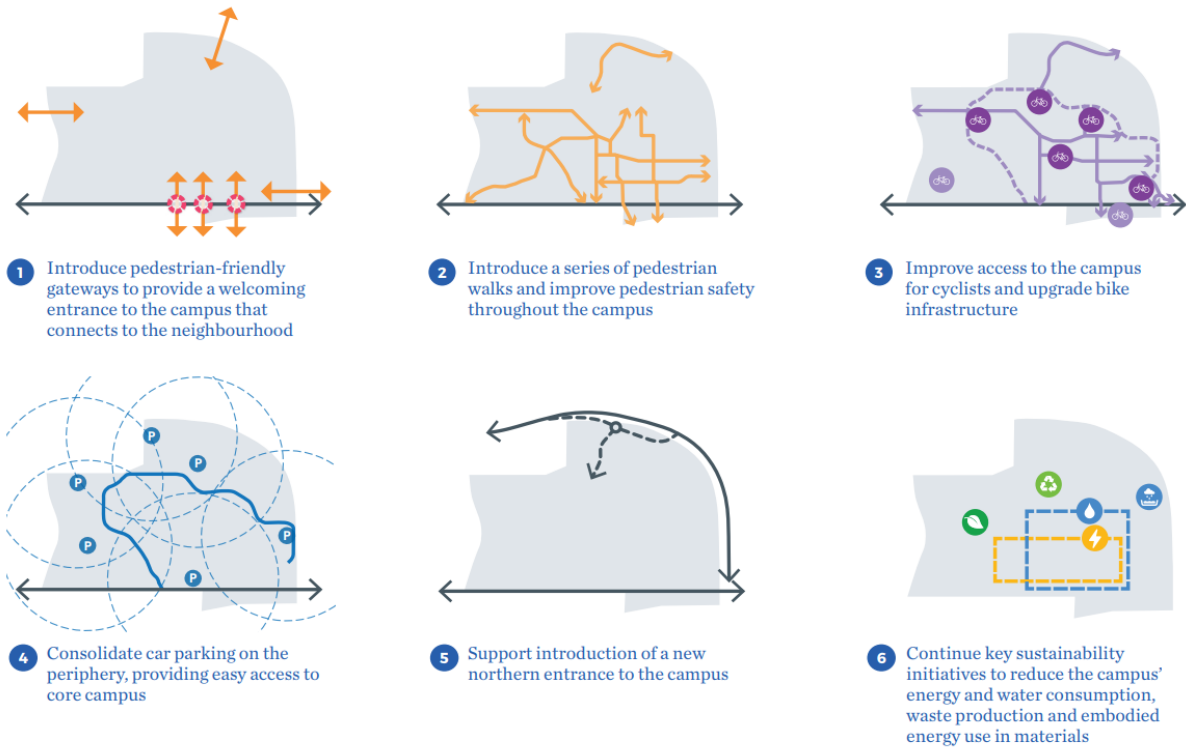


Figure 22: High level summary of proposed actions at UoW main campus

There is clear alignment with local and state plans in the Master Plan (for example, plans for a new interchange on the M1 Motorway, north of the campus; upgrades to the streetscape close to the North Wollongong station to improve the pedestrian experience; and alignment with regional projects such as a new Northern Education Precinct Gateway and the Campus to Beach Cycleway).

In terms of future aspiration for UOW the Master Plan identifies separate strategies and vision statements for pedestrians and cycling, public transport and vehicular access and car parking (see Table 11).

Table 11: Key strategies and vision statements for Transport - UOW

Strategy	Vision
Pedestrian and cycling	Improve pedestrian priority and amenities (de-emphasis on vehicles). An intuitive Primary Pedestrian Network will be introduced, creating direct access paths, clear links and strong sight lines that is easy to navigate. High-quality shared zones will be introduced improving pedestrian safety.
Public transport and vehicular access	Efficiently use the bus terminus with the capacity for future growth. New entrance and Arrival Plaza. Vehicular access restricted to disability, service and contractor vehicles.
Car parking	Free up core campus for building and improved public realm, and move parking spaces into key multi-deck and underground locations. The number of parking spaces will be maintained over the next 20 years. Convenient and affordable car parking will be provided for those who need it: such as service and contractor vehicles, disabled users and regional students.

Greater detail is provided in the associated Transport Access Plan 2019-2021 which categorises priorities (high, medium and low) for each of the strategy areas. An annual progress report is prepared to show the status of this actions. No specific information is provided on costs of implementation.

The Master Plan identifies specific targets for modal shift (Figure 23).



Figure 23: Modal shift target for UOW main campus

Communication remains a strong feature of sustainable transport initiatives and a useful feature of the communication strategy is the transport access guide²⁹ and a living on campus transport handbook³⁰.

²⁹ <https://documents.uow.edu.au/content/groups/public/@web/@bg/documents/doc/uow262694.pdf>

³⁰ <https://documents.uow.edu.au/content/groups/public/@web/@accomm/documents/doc/uow219658.pdf>

Some evidence from the 2019 travel survey is included in the most recent progress report (2020). In 2019 results showed that nearly 50% of staff and students used public and active transport to get to the campus. This is an appreciable increase from 2007 (20%) – see Figure 24.

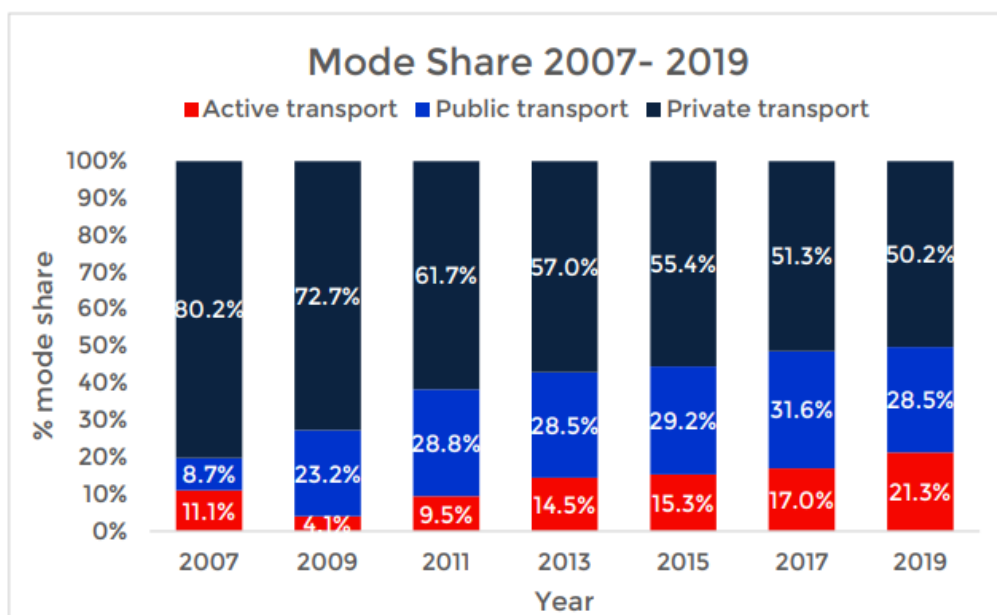


Figure 24: Mode Share Comparison 2007 - 2019 at UOW³¹

The Transport and Access Action Plan Progress Report 2020 contains an update on the impact of the COVID-19 pandemic. In common with other universities across NSW, attendance at the campus diminished greatly from March 2020 when remote working, teaching and learning arrangements were implemented. Paid parking was suspended in March to assist those who needed to continue working or studying on the campus. Due to reduced travel requirements to the campus, the Gong Shuttle bus (connecting UOW to the city, the beach,) was suspended at the end of March. The North Gong Shuttle (linking the Wollongong Campus with North Wollongong Station) has operated on a reduced timetable since the end of March. Measures to support physical distancing requirements included signage, implementing bus capacity limits, continuous monitoring of demand for parking and bus services, sharing of travel advice and information, and availability of hand sanitiser for UOW Shuttle passengers. These initiatives have continued in early 2021.

As restrictions eased, *return to campus plans* were put in place to provide a phased return for staff and students to the campus. While there was a gradual return of some staff and students over the rest of the year, on campus attendance did not return to previous numbers. Over the Spring Session it was estimated that up to 5000 students were on campus each week. Data was gathered to understand the change in on campus attendance and travel modes. Occupied ticket and permit on campus parking rapidly decreased dramatically to a weekly average of 18% (April) and did not increase beyond 69% for the remainder of the year (Figure 25). Parking surveys were carried out in streets surrounding the campus and indicated that there were about 20% fewer cars parked in the study area between the February and April survey periods. Bike base entries (with parking / storage) declined from an average of 650 entries per month in 2019, to an average of 330 entries per month in 2020 (Figure 26).

³¹ Source: <https://documents.uow.edu.au/content/groups/public/@web/@bg/documents/doc/uow262676.pdf>

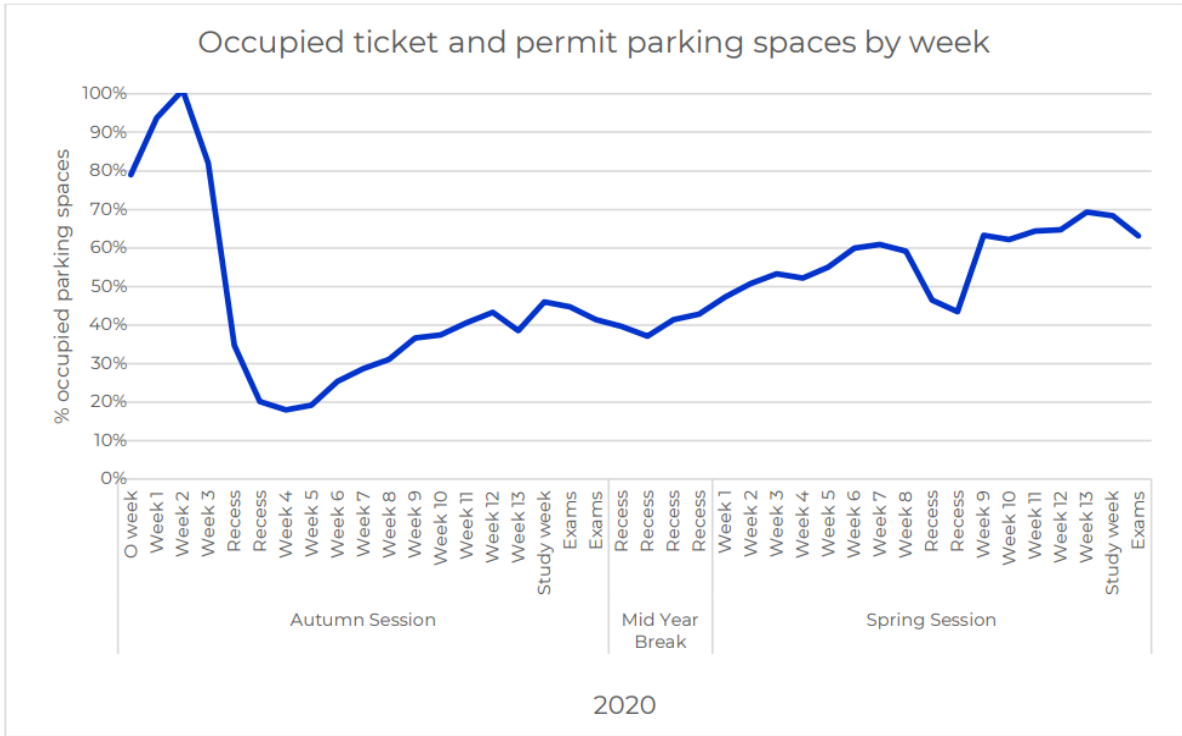


Figure 25: Occupied parking spaces on the Wollongong Campus – Autumn and Spring Sessions 2020

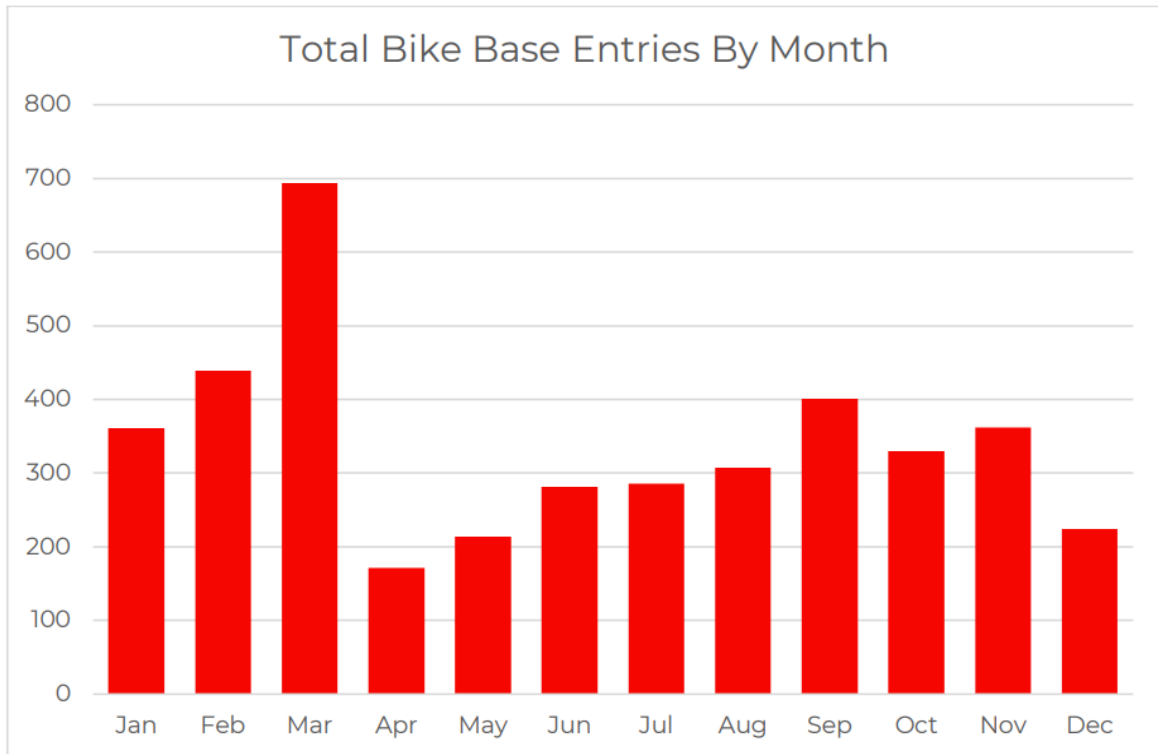


Figure 26: Bike Base (parking / storage) entries for 2020 - Wollongong Campus

Sustainable Transport initiatives at University of Queensland (UQ)

Transport is included within the UQ Sustainability Action Plan, 2016 to 2020³² which addresses UQ's four campuses (the main St Lucia campus is located 7 kms from the CBD). A revised Sustainability Strategy which includes the Transport Strategy, has been endorsed by the Vice-Chancellor and University Senior Executive Team and is scheduled for Senate in October 2021.

The Sustainability Action Plan (SAP) identifies that Transport is a multi-dimensional area of UQ's operations. Three foci are identified:

- **Fleet:** UQ has been trying to reduce the fleet emissions of the purchased vehicles by reducing the size of the University fleet. These actions have seen greenhouse gas emissions from the fleet reduce by in excess of 20% over the past four years
- **Commuting:** The aim is to encourage walking, cycling and public transport as the preferred transport modes.
- **Business travel:** The aim is to eliminate unnecessary work or study-related travel (including air and vehicle travel), increase sustainable modes of transport and offset emissions from air travel.

Actions and timeframe associated with each of the above are detailed in the plan and an example is given in Figure 27 . However, the SAP does not identify specific outcomes, impacts or outputs. "Transport fuels and oils" are included in a carbon footprint calculation.

Table 3.4: Business Travel objectives & actions

Broad Objective	Required Actions	By When
Measure and reduce greenhouse emissions associated with business travel	Develop and implement measurement systems for calculating emissions of all measurable business travel.	2017
	Investigate, design and seek approval for an internal offset charge for all UQ air miles travelled, with the funds raised being invested in additional sustainability projects and initiatives.	2018
	Continue to promote the use of public transport and the intercampus bus and shuttle services through marketing and information provision, with a specific focus on using these options as an alternative to private vehicle travel.	Ongoing
	Increase the availability and use of existing virtual meeting facilities, including by working with ITS to improve ease of use and accessibility.	Ongoing

Figure 27: UQ SAP: Business travel objectives and actions

The implementation plan is a strong aspect of the SAP (Figure 28) which identifies the need for a strategic approach that considers aspects such as communication and engagement, financing, and tracking progress. Each of these are identified at a high level and lack specific detail for transport.

³² <https://sustainability.uq.edu.au/files/1197/UQ-SAP.pdf>

Figure 4.1: Implementing the SAP



Figure 28: The SAP Implementation Plan

Sustainable Transport initiatives at University of Western Australia (UWA)

UWA produced a final draft Transport Strategy (2020) and associated UWA Travel Survey Report (2019); both documents are prepared by an external consultant. The Transport Strategy outlines some of the initiatives to encourage the use of public transport, and the timeframes, as well as identified emerging commuting patterns.

The UWA Transport Strategy contains an overarching Vision and guiding principles in support of enabling an easily accessible campus for all staff, students and visitors, whilst continuing to improve and encourage use of sustainable modes of transport. The UWA Transport Strategy focuses on the UWA Crawley Campus, QEII/UWA Medical Centre (QEII/MC) Campus and the UWA Nedlands Campus.

The UWA Transport Strategy is integrated with the UWA Masterplan vision to rejuvenate and activate the campus, focusing on improving the quality and ease of connections, rather than a significant growth in travel demand. This includes improving the ease and attractiveness of access to the University by sustainable and active travel modes, for the journey to Crawley campus and between campus; and improving the quality of connections for sustainable and active travel modes to industry and research sites around the campus, to encourage more sustainable travel and to support the growth of 'innovation clusters'.

There are several State and Local Government plans currently under development which will impact the university and the UWA Transport Strategy provides the institution with an opportunity to identify the key issues and possibilities which could be recognised in new plans, further investigated and delivered by Government agencies (page 15).

Specific Transport objectives are identified (Figure 29).

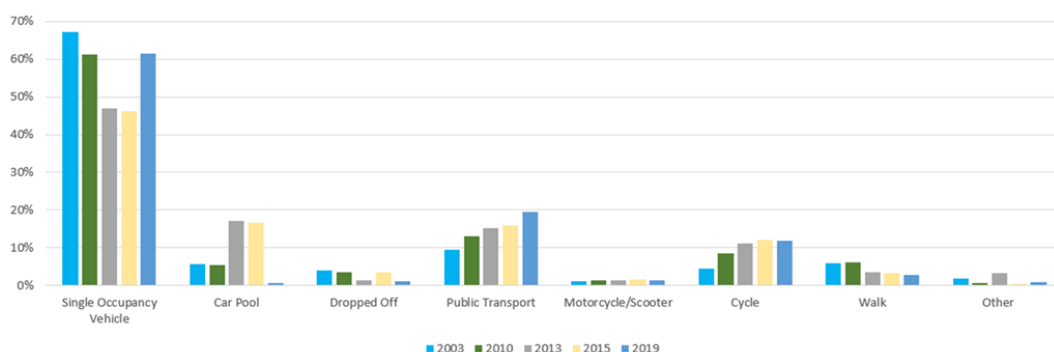


Figure 29: Transport objectives at UWA

The 2019 travel survey reveals travel trends for staff and students (Figure 30). The results for staff travel indicate that the use of public transport has increased at a similar rate over the last 15 years, although it is still much lower overall than student use of public transport. There has been a significant increase in staff driving to campus by Single Occupancy Vehicle (SOV) since 2013 with 61% arriving this way in 2019. This could be related to the large decrease in carpooling to campus over the same period, with the 2019 survey receiving the lowest carpool mode share recorded. It may also reflect a reduced staff volume since 2013 which has enabled an increase in the proportion of staff able to drive and park at campus. Student numbers have also declined in the same period but the (pre-pandemic) UWA Masterplan indicates that the growth of international students attending the university is expected to continue, detailing an 11.4% increase year over year. International Students are more likely to reside closer to campus, and not own a car, creating opportunities to influence mode choice.

In contrast to staff, over half of students travel to UWA by public transport. A quarter of students drive to campus by SOV (26%), less than half the proportion of the staff SOV mode share, whilst only 1% carpool to campus, and 1% of students are dropped off. Nearly a fifth of students (18%) travel via active/self-powered means, with walking being the most popular active mode of transport – this reflects the number of UWA students living around the campus in halls of residence and share houses.

The challenge for influencing student mode choice is to improve the experience and perception of travel options to campus, particularly public transport.



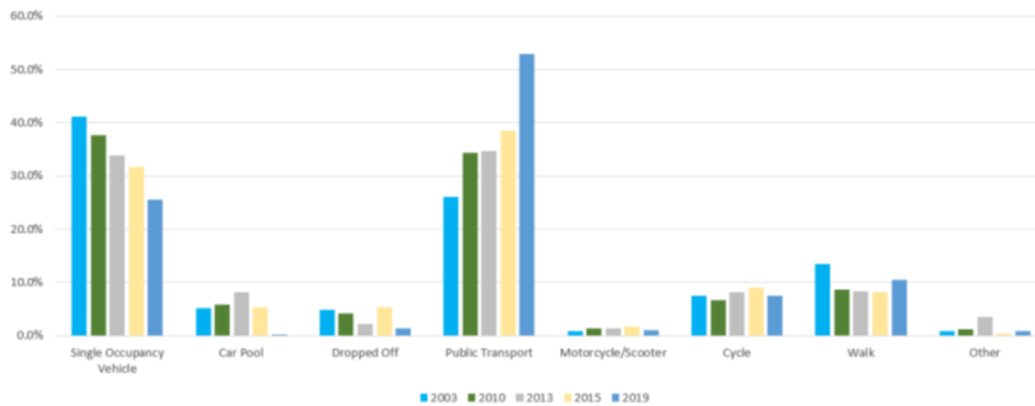
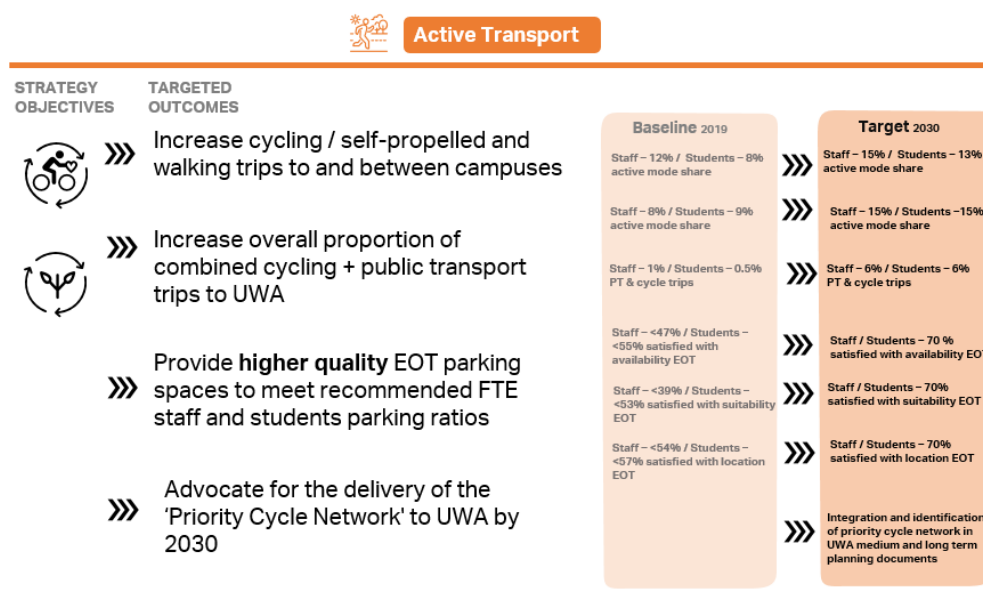


Figure 30: Staff (top) and student (bottom) travel modes to campus

There are clear recommendations for the responsibility and management of the Transport Strategy and a number of measures are proposed to ensure smooth implementation:

- Employ an FTE UWA Transport Coordinator to be responsible for ongoing monitoring and evaluation of the Transport Strategy and development of an Implementation Plan.
- Develop a Transport Implementation Plan outlining the 10-year program of UWA committed transport projects and initiatives, including travel behaviour change promotions and incentives, and confirmed budgets and funding sources.
- Undertake the UWA Staff and Student Travel Survey every 2 to 3 years to monitor UWA Travel demand, issues and trend.

The Transport Strategy identifies clear targets for Active Transport and Public Transport (Figure 31) which map to the Objectives identified in Figure 29.



 **Public Transport**

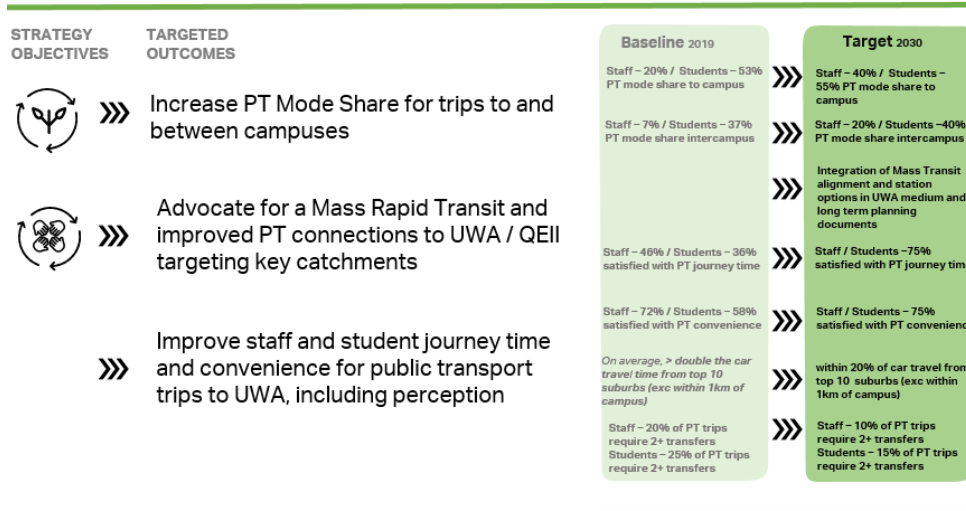


Figure 31: Strategic Objectives, Outcomes and Objectives: Active Transport and Public Transport

Specific recommendations are made for Active Transport, Public Transport and Parking. A snapshot is shown below in Figure 32. The tables outline the theme of the recommendation, what UWA’s role would be in promoting the initiative, an estimated cost which can range from low to high, which objectives the recommendation supports, and the benefits shared with the QEII Activity Centre and government.

Theme	Recommendation	UWA Role	Priority / Timeframe	Cost	Supports UWA Objectives	Benefits for QEII Activity Centre / Local / State Government
Promotion and Innovation	<p>Implement a regular marketing campaign to increase public transport uptake amongst staff and students:</p> <ul style="list-style-type: none"> - Regular updates and promotion of public transport service improvements. - Regular promotion and incentives for alternatives options for first and last leg of PT journeys (cycle, rideshare, new shuttle services). - Promote cost savings, convenience (no parking hassles, extra 'screen' time) and environmental benefits for public transport trips to or between campus. - Offer incentives for staff and students to try public transport for 1 day / 1 trip a week (SmartRider top ups, rideshare / bike share discounts, discount on 1 day parking a week etc). 	Lead Delivery and Funding (Minor)	Short Term	Low	1, 3	Be a leader for the City of Perth and Australian universities. Reduce congestion and parking demand in QEII - UWA precinct.

Figure 32: Extract from Recommendations for Public Transport

In terms of funding the implementation several potential sources are identified. A minimum percentage of UWA campus parking fees should be diverted into a Transport Strategy Implementation Plan delivery fund. Industry funding partners will be established for trials of mobility services – such as RAC, and shared mobility providers (for example Liftango, Lyft, Uber, Didi) and companies trialling Connected Automated (driverless) Vehicles. There are a number of Government-led initiatives which intersect with activities in the precinct.

Return to campus plans

Several references have been made to the COVID-19 pandemic and its impact on travel patterns to and from university campuses in the preceding section, where information is available. With the onset of the pandemic, universities have had to adapt their current teaching styles during 2020 and beyond. From March 2020, the Australian Government’s lockdown measures (as in many countries) limited unnecessary transport and actively encouraged individuals to work and study from home where possible. Journey to work patterns have been substantially reset as the result of COVID-19. The existing iMOVE project “Working from Home (WFH) and implications for revision of metropolitan strategic

transport models” has shown that the influence of WFH is likely to be profound (see Beck and Hensher, 2021). For example, findings from the project’s on-going surveys show:

- Around 49% of respondents in Greater Sydney reported their work can be performed from home some or all of the time (in ‘Wave 3’ surveys held in September/October 2020). Around 45% of respondents in the Greater Sydney reported their work can be performed from home some or all of the time (in ‘Wave 4’ surveys held in May-June 2021).
- 77% of workers reported the same or increased levels of productivity working from home (in Wave 3) while 80% of workers in Greater Sydney reported the same or increased levels of productivity working from home (in Wave 4).
- Employees in Greater Sydney reported they would like to work from home on average 1.74 days per week once COVID-19 restrictions are eased in Wave 3, and 1.53 days per week in Wave 4.
- The spread of working from home days is fairly even across Monday to Friday, although the percentage of people working from home only has declined comparing Wave 3 to Wave 4 (Figure 33).

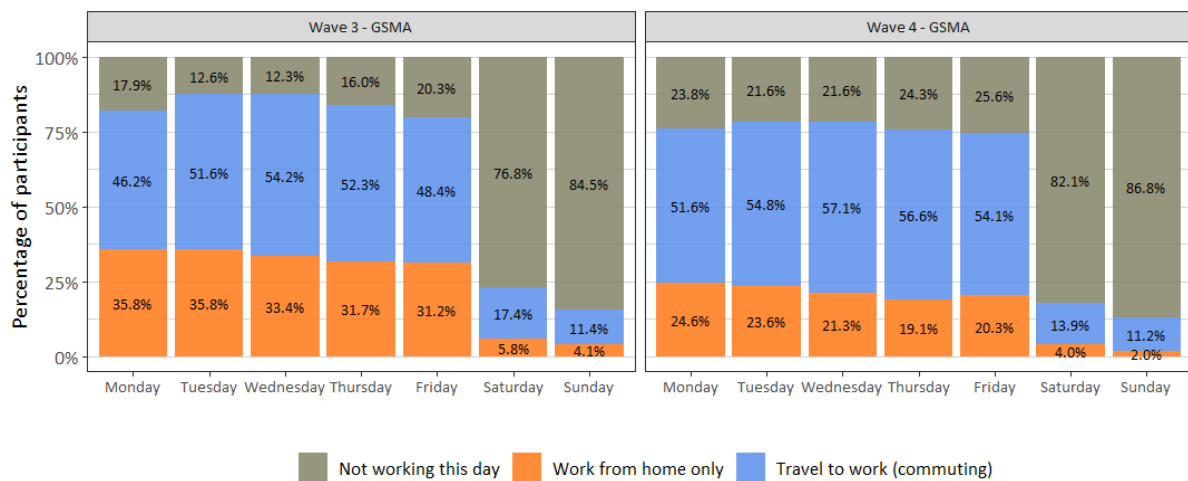


Figure 33: Reported spread of WFH across the week

Studying from home

Whilst studying from home (SFH) has subsided in Australia for primary and secondary education, it largely remains in place for tertiary education, and in many instances international students are now studying from their home country (though in considerably less numbers than before across the sector).

The physical absence of tertiary students has had a significantly large impact on public transport (as well as on local suppliers of student accommodation, and other support industries and services). With the easing of restrictions, many students are showing a keen interest in hybrid modes of teaching and learning.

The move to online teaching in universities has been maintained with a mix of small group teaching and online lectures throughout 2021; however, future policies on education delivery and staff and student attendance on campus remain unconfirmed. This uncertainty is further compounded by the extended lockdown in Greater Sydney from late June onwards which lifted from October 11th when the 70% double vaccination target was reached.

Crucially, we remain within the period in Australia when international borders have not yet opened (they will open to citizens and permanent residents from November 1st 2021 but no date has been set for other categories of travellers, although international student corridors are proposed) and many international students have not been able to return to campus. Universities thus require some indication of where returning students will live and their preferred study modes.

Since both staff and students may not need to travel to and from their university as regularly as previously, this could have a lasting impact on future travel choices and subsequent repercussions for transport emissions. For example, with an increased incidence of working and studying from home, someone who previously travelled to campus each day by public transport may in future only visit campus twice a week and decide to travel by private car.

As restrictions on travel lifted after lockdowns, public transport operators and authorities moved to ensure public transport is safe to use through reduced capacity on buses and trains to ensure social distancing, messaging via Apps to aid decision making about when to travel and improved sanitisation (see for example the measures put in place at UOW which were discussed above). In parallel, an uptake in private vehicle use has been witnessed because of the ongoing biosecurity fears associated with public transport use (Beck et al., 2021).

The university-sector response

From June 2020 Australian universities began to implement return to campus plans. This involved the development of guidelines and protocols with a focus on keeping the community safe. As can be seen from Tables 7 and 8 (and the additional detail in Appendix 2) return to campus planning information was generally reflected in the provision of dedicated pages for COVID-19 updates; in some cases, amendments were also made to public facing travel planning websites. Detailed return to campus plans were less likely to be in the public domain was relatively limited.

Of the universities discussed in the previous section only one (Macquarie University – MQU) has made survey results available in the public domain. In addition to questions about staff and student travel by mode before and “after” the pandemic (Figure 20) the MQU travel and work survey has made a number of recommendations with respect to future patterns of work. Their findings indicate that most employees (81%) say they would like to work remotely at least one day a week, and 56% wish to work remotely at least two days a week. In response, MQU has undertaken to:

- Leverage COVID-19 WFH experience to embed remote working culture across all employees
- Make all meetings digital by default, to enable multi-location decision making
- Work with IT to equip all new starters as flex by default
- Identify a senior remote work champion, and case study them to another manager

These proposed changes mirror those made by many other employers and have significant implications on future transport choices. The next sub-section considers the development of the return to campus plans of the University of Sydney over a period of 18 months since the start of the pandemic.

Case-study: USYD

The University of Sydney **return to campus roadmap** has been updated as the external situation has developed and more has become known about the nature of the virus. The return to campus roadmap as at July 2020 which was developed for the period following the first lockdown in Greater Sydney is shown as Figure 34. This proposed a three-step phased return to face-to-face activities across the various campus locations.

1. **Step 1 (from 25 May).** Remote learning continued; education and research activity unable to be done remotely recommenced on site where possible. Return to campus planning mobilised and initial plans submitted. Staff encouraged to continue working from home.
2. **Step 2 (from 29 June).** Finalise plans for Semester 2 including to bring as many students back to campus as safely as possible. Some buildings reopened to support priority teaching and research activity. COVID-safe work practices communicated, enhanced cleaning continues, signage installed (Figure 35). Manager toolkit and guidelines on safe return to work released. Interstate research travel as approved by VC. Risks monitored and mitigation strategies in place.
3. **Step 3 (from 27 July).** All staff start to return to campus aligned with local plans. Rostering and flexible work arrangements agreed. All research activity on campus aligned with local plans. All buildings reopened with continued enhanced cleaning. Prepare for NSW international student corridor pilot. Interstate research travel as approved by the Vice Chancellor. Options for on campus events reviewed and guidance provided to staff. Early Semester 2 commences **3 August**.

Semester 2 commences 24 August. Most lectures delivered online. Small group teaching will resume face to face on campus. Remote study will continue to be available to students impacted by travel ban. **By 10 October.** Potential for all staff to be working on campus under new flexible working policy and pending physical distancing requirements.

University of Sydney return to campus roadmap – updated 9 July 2020

Step 1	Step 2	Step 3
<p>Federal Govt Guidelines</p> <ul style="list-style-type: none"> 5 visitors at home, 10 in business and public places Work from home if it works for you and your employer Libraries, restaurants, community centres and shopping open Local and regional travel Universities/Colleges to increase face-to-face teaching where possible 	<p>Federal Govt Guidelines</p> <ul style="list-style-type: none"> Non-work gatherings of up to 20 people Universities/Colleges to increase face-to-face teaching where possible Some interstate travel 	<p>Federal Govt Guidelines</p> <ul style="list-style-type: none"> All gatherings follow 4 square metre rule, stay 1.5m apart where possible Universities/Colleges to increase face-to-face teaching where possible and prioritise hands-on skills-based learning Consider re-opening residential colleges and international student travel All interstate travel
<p>NSW State Govt Guidelines</p> <ul style="list-style-type: none"> Gatherings of up to 20 people at home and in public Work from home if it works for you and your employer Community centres, childcare, restaurants open, subject to physical distancing restrictions. <p>University of Sydney, from 25 May:</p> <ul style="list-style-type: none"> Semester 1 continues to offer remote learning Return to campus planning is mobilised, staff and unions consulted Education and research activity that cannot be done online will recommence where possible, with priority given to final year students, HDRs, externally funded research projects and long-term research projects Staff are encouraged to continue working from home Managers to submit initial return to campus plans via Service Now <p>From 15 June:</p> <ul style="list-style-type: none"> Library, study halls and some services open 	<p>NSW State Govt Guidelines, from 1 June:</p> <ul style="list-style-type: none"> From 1 July, the number of people allowed inside most indoor venues is limited to one person per square metre (essential services exempt* as below). Some premises must develop COVID-19 Safety Plans. From 1 July, public transport capacity will double <p>University of Sydney, from 29 June:</p> <ul style="list-style-type: none"> All return to campus plans finalised and submitted Semester 2 unit offerings and on-campus teaching activities finalised, to bring as many students back to campus safely as possible Some buildings re-opened to support priority teaching and research activity Research travel interstate approved by VC COVID-safe work practices communicated to staff and campus signage installed to encourage physical distancing and good hygiene practices. Enhanced cleaning continues across campus Manager toolkit and guidelines for staff return to work released Risks monitored and mitigation strategies in place <p><small>*University is generally exempt from the 4 square metre rule under the Public Health (COVID-19 Restrictions on Gathering and Movement) Order (No 4) 2020 (and previous orders) for gatherings necessary for the normal business of the University. Some premises, such as libraries, retail spaces, food outlets, museums and others attract specific restrictions including capacity limits and physical distancing. Work health and safety considerations must also be observed.</small></p>	<p>NSW State Govt Guidelines to be released</p> <p>University of Sydney, from 27 July:</p> <ul style="list-style-type: none"> All staff start to return to campus under their local plan Rostering and flexible work arrangements agreed locally with staff and union consultation All research activity resumed on campus under local plan All buildings re-opened and operational with enhanced cleaning conducted Opening of more study areas and services on campus based on demand Prepare for NSW international student corridor pilot Research travel interstate approved by VC Options for events on campus to be reviewed and guidance provided to staff <p>Semester 2 (starts 24 August):</p> <ul style="list-style-type: none"> Most lectures will be online Small group teaching resumes face-to-face on campus – seminars, tutorials, group project work, practicals and labs Access to remote teaching continues for students impacted by travel ban <p>By 10 October: Potential for all staff to return to working on campus, under new flexible working policy and pending physical distancing requirements</p> <p><small>Page 1</small></p>

Figure 34: USYD return to campus roadmap (as at July 2020)

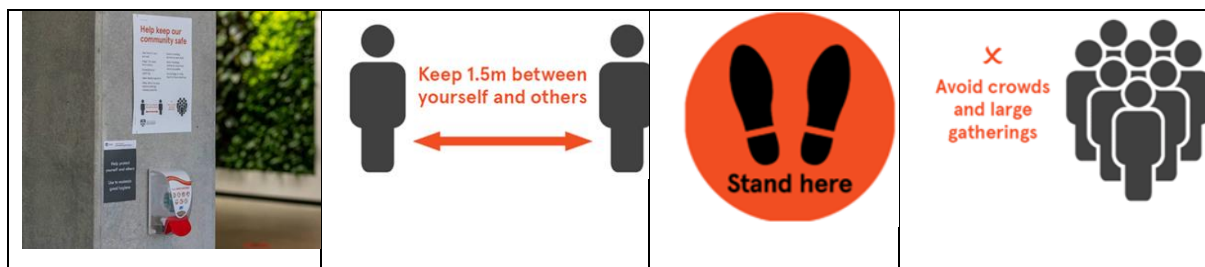


Figure 35: COVID-19 signage at USYD

A return to campus survey, which was open to all staff ran from Wednesday 3 June to Wednesday 10 June, 2020 had a 50% participation rate, comprising of 63% professional and 37% academic staff. A snapshot of results are shown in Figure 36 below.

The majority of both professional and academic staff indicated a preference to continue working from home or remotely at least some of the time. There was also an increase in preferences for how many days staff would like to work remotely post-pandemic versus how many they were working prior to working remotely.

- The reasons colleagues were most looking forward to returning to campus were for the social connection with colleagues, easier collaboration and greater opportunity for increased physical movement.
- Face-to-face teaching was the top-ranked positive change for academic staff.

- Staff concerns regarding returning to campus included concerns around others practising physical distancing, being able to commute safely and the use of shared spaces, as well as less flexibility with time.
- Colleagues cited a mixture of positive and negative experiences of working remotely. Benefits listed included less time spent commuting to campus, an increased work-life balance, flexibility of work hours and the opportunity for focused work time. Challenges include reduced workstation quality, reduced physical activity and working longer hours.

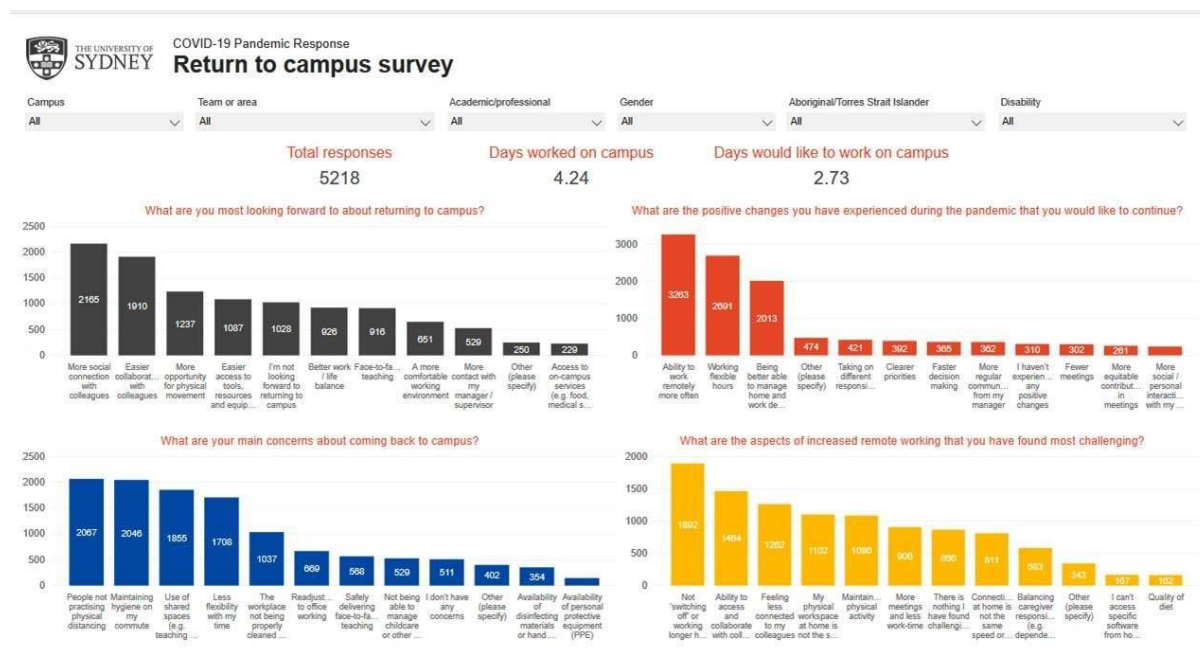


Figure 36: Snapshot of findings from the return to campus survey (June 2020)

As a successor to the return to campus roadmap, in 2021 The University developed a COVID response plan for 2021, Figure 37, which outlines three potential scenarios:

- no/low local transmission (referred to as 'Scenario A')
- a local or generalised outbreak, allowing for possible state-wide or local restrictions ('Scenario B')
- and a longer-term 'COVID-normal' scenario ('Scenario C')

By October 2021 the University is operating under Scenario B. Details of current operational arrangements are provided via the intranet on the COVID-19 Operations page, which also includes definitions of critical and teaching and research activities. Various aspects of the operational response will be activated and de-activated as the COVID-19 situation dictates movement between scenarios.

There are publicly-facing USYD COVID-19 web pages³³ with comprehensive guidance on keeping the campus safe and a rolling “latest updates” page, but no guidance on transport. The “getting to campus” web pages have not been updated for COVID.

³³ <https://www.sydney.edu.au/covid-19/>

University of Sydney COVID Response Plan 2021				
All decisions made in accordance with Federal and NSW State Government guidelines and subject to change.	Scenario A: Low COVID status quo No/very low levels of community transmission; borders closed and many students still based overseas; relatively low levels of vaccination in Australia	Scenario B: Local or generalised COVID outbreak Local outbreak or some level of community transmission; low-medium levels of vaccination in Australia; change to Public Health Order that impacts the University's operations	Scenario C: Long-term COVID-normal Borders open; international students return; relatively high levels of vaccination in Australia	
	NSW State Guidelines <ul style="list-style-type: none"> - 1.5m distancing recommended where possible - Masks recommended on public transport but not mandatory - Theatres, cinemas and stadiums allowed 100% occupancy - No requirement or advice to work from home 	NSW State Guidelines <ul style="list-style-type: none"> - Possible local or state-wide lockdowns - Possible reinstatement of social distancing and mask requirements - Possible restrictions on interstate travel 	NSW State Guidelines/Federal Guidelines <ul style="list-style-type: none"> - TBA, may include proof of vaccination and/or some form of quarantine 	
	University of Sydney <ul style="list-style-type: none"> - Most staff should be on campus as the primary place of work - Flexible work arrangements can be made by agreement at the local level in accordance with the Flexible Work Policy (as updated in 2020) - Large lectures (>60 ppl) will generally continue to be offered online; some larger interactive classes may also be offered in person - Smaller classes, including tutorials and labs, will be offered in person and with remote options for overseas students - Onshore students complete a "COVID safety" module on Canvas - Room capacities at or near normal capacity, dependant the activity and design of the space - COVID-safety disinfection of high-touch points in public spaces and daily cleaning. Disinfectant wipes and hand sanitiser will be available. Staff asked to remain home if unwell or have any symptoms, and get tested 	University of Sydney <ul style="list-style-type: none"> - Remain ready to respond to outbreaks, including the possible need to revert to online teaching and working at short notice - Follow advice from NSW Health - Targeted staff and student coms as needed - Intranet remains 'source of truth' for advice for staff https://intranet.sydney.edu.au/coronavirus/overview.html; public website for students https://www.sydney.edu.au/study/coronavirus-infection-university-of-sydney-advice.html - Reinstate Crisis Management Committee and Academic and Operational response teams if required 	University of Sydney <ul style="list-style-type: none"> - Return of international students to campus - Most staff should be on campus as the primary place of work. - Flexible work arrangements can be made by agreement at the local level in accordance with the Flexible Work Policy - Most smaller classes to be offered in-person only - Large lectures TBA - Rooms will be cleaned daily. Disinfectant wipes and hand sanitiser will be available. Staff asked to remain home if unwell or have any symptoms, and get tested - Students may be required to complete a "COVID safety" module on Canvas (TBC) - Quarantine (if required) at suitable student accommodation venues if possible 	
	Travel <ul style="list-style-type: none"> - Domestic travel and travel to NZ can be approved by the relevant UE member - International travel, including travel to 'bubble' destinations other than NZ, requires the approval of the Vice-Chancellor - Physical student exchange and international mobility programs on hold for now - Local and domestic fieldtrips and placements can proceed 	Travel <ul style="list-style-type: none"> - Domestic travel and travel to NZ can be approved by the relevant UE member, subject to lockdown requirements - International travel, including travel to "bubble" destinations other than NZ, requires VC approval - Local and domestic field trips and placements can proceed subject to lockdown requirements 	Travel <ul style="list-style-type: none"> - Domestic and international travel can be approved by local UE member (subject to government advice/regulations) (TBC) - Student exchange and mobility experiences likely to resume (subject to government advice/regulations) (TBC) 	

Figure 37: USYD COVID response plan 2021

A further staff survey was conducted in September 2021 to all continuing, fixed term, and casual staff with a view to understanding how the stay-at-home restrictions are impacting staff and their work. The response rate was 39% and of the respondents, 40% were academic staff and 60% were professional staff. The outcome prompted the VC to comment in a communication to staff: "Unsurprisingly our staff survey also indicates that, as we start to return to campus, many colleagues prefer to work in a hybrid manner, and this is being factored into our planning so that we don't lose the considerable gains made to flexible working during this time. I will provide more details on the results of the survey and next steps over the coming days." (Update on our return to campus plans, 14/10/21).

In a further update to staff on 20/10/21 the VC wrote – "Colleagues strongly expressed a desire to continue to work flexibly as we begin our gradual return to campus. The benefits of a flexible approach to working for both staff and organisations are now well known and widely accepted, both within our community and more broadly, and we will maintain our flexible working approach and seek to build on it where we can, in mutually beneficial ways."

At the time of writing (October 2021) Student Services have initiated a return to campus survey for the student community with the following invitation "As we now start to look beyond lockdowns and COVID-19, the University is committed to setting every student up for success in 2022. We want to hear from you, our students, to help shape your experience at Sydney next year. We're asking you to share your feedback of your study experience and your study plans for 2022, including your preferences to study on-campus when restrictions ease and when international travel to Australia recommences. This feedback will help us to better understand your experience, and to shape your study options."

Return to campus initiatives at other universities

UNSW have dedicated “Safe Return to Campus” guidance on their COVID-19 web pages³⁴. There is some travel guidance in the Health, Safety and Wellbeing section which includes advice on using public transport safely (including a link to the TfNSW Travel Choices website), the benefits of active travel and current parking fee arrangements.

UTS have developed a campus reactivation plan³⁵ which is underpinned by four key principles:

1. Health and wellbeing of our community – the practicing of social distancing, regular and thorough cleaning, and other health measures remain integral to campus life.
2. Following advice and direction of State and Federal authorities.
3. Keeping disadvantaged, vulnerable and high-risk groups foremost in our considerations.
4. Consideration of what’s working well for students who are studying remotely, so we can look to leverage the benefits of the new way of learning moving forward.

There are live UTS COVID-19 impacts and response pages³⁶ which provide a link to the guidance but no content on transport.

MQU have developed a very similar COVID Safe Plan³⁷ to that of USYD which is built around a Return to Campus Roadmap and a Return to Campus Checklist. A specific section on Transport and Travel is included and directs staff and students to information provided by the NSW Government, Transport for NSW and the university’s own Coronavirus website³⁸. MQU’s “Getting to Macquarie” page makes a reference to impact of COVID-19 on commuting patterns³⁹.

UOW has a comprehensive set of COVID-19 pages⁴⁰ with a link to the COVID safe campus transition plan⁴¹ (Figure 38). There are specific references to the role of flexible working arrangements going forward. Transport is specifically referenced in terms of precautions around the use of carpooling and the requirements for the use of masks on public transport. UOW offers specific COVID-19 travel advice via their getting to campus pages (Figure 39)⁴².

³⁴ <https://www.covid-19.unsw.edu.au/safe-return-campus>

³⁵ <https://www.uts.edu.au/current-students/news/phased-plans-reactivate-campus>

³⁶ <https://www.uts.edu.au/current-students/news/coronavirus-and-international-travel-information>

³⁷ https://www.mq.edu.au/_data/assets/pdf_file/0007/989728/MQ-COVIDSafe-Plan.pdf

³⁸ <https://www.mq.edu.au/about/coronavirus-faqs>

³⁹ <https://www.mq.edu.au/about/locations/getting-to>

⁴⁰ <https://www.uow.edu.au/coronavirus/>

⁴¹ <https://documents.uow.edu.au/content/groups/public/@web/@pmcd/@smc/documents/doc/uow270778.pdf>

⁴² <https://www.uow.edu.au/about/locations/wollongong/getting-to-campus/>

COVID safe campus transition plan

80% DOUBLE VACCINATION (NSW)		PLANNED FOR IMPLEMENTATION FROM 1 DECEMBER 2021
<p>Only fully vaccinated adults (16+) in Greater Sydney (including Wollongong) and at least one dose in Regional NSW as well as those with medical exemptions (staff and patrons) will have access to the activities listed below in accordance with the Reopening NSW Roadmap. Unvaccinated staff that are required to be on campus can do so after a risk assessment is completed and appropriate risk controls determined and implemented.</p> <p>The following will apply to all regardless of their vaccination status. Vaccination requirements remain for NSW Government mandated occupations OR as outlined in the UoW Immunisation Guidelines. Unvaccinated staff that are required to be on campus can do so after a risk assessment is completed and appropriate risk controls determined and implemented.</p>		
TEACHING	Remains in remote delivery mode unless by exception as approved by DVCE and CMT, for all UoW teaching sessions in 2021. *awaiting confirmation on summer session from DVCE. Some subjects may require in person teaching for practical, lab or accreditation requirements. Subject coordinators will communicate with students as needed.	
STAFF WORKING FROM HOME	Continue to work from home if reasonably practical. Includes any vulnerable person needs. Working from campus can occur in line with operational needs, flexible work arrangements and the Covid Safe Plans for Office Environments, and Research Activities.	Continue to work from home if reasonably practical. Includes any vulnerable person needs. Progress to work from campus in line with operational needs, flexible work arrangements and the Covid Safe Plans for Office Environments, and Research Activities.
ACADEMIC WORK, RESEARCH AND EXAMS	Staff, undergraduate and HDR students can attend their work area for work and research including human participants and fieldwork according to Covid Safe Plans. Most exams online, exams in person only where these are required for accreditation or similar purposes.	
CAMPUS OPENINGS	Campuses previously closed can open in accordance with Local Government Area restrictions.	Campuses previously closed can open in accordance with Local Government Area restrictions.
TRAVEL	International and domestic travel (from 1 November), as approved by COO in accordance with border entry requirements. Carpooling allowed between vaccinated people.	International and domestic travel, as approved by COO in accordance with border entry requirements. Carpooling permitted.
RETAIL, POOL & GYM	Pulse, UniActive, UniShop, and food outlets operate according to NSW Health Covid Safe Plan requirements.	Pulse, UniActive, UniShop, and eateries operate according to NSW Health Covid Safe Plan requirements.
SERVICE CENTRES	Service Centres able to re-open where required, in line with Covid Safe Plan.	
MASKS	Masks required for all staff and customers in all indoor settings including on public transport, planes and in airports (except children under the age of 12). Masks no longer required in office buildings (unvaccinated people must still wear a mask in the office). Masks no longer required in outdoor settings (except for front-of-house hospitality staff).	Masks required only for public transport, planes and airports and indoor front-of-house hospitality staff. Masks no longer required in outdoor settings (including for front-of-house hospitality staff).
EVENTS	Up to 500 people attend controlled (seated and ticketed) events: Up to 200 for Covid Safe events.	Indoor events as per can occur with 1 person per 2sqm in accordance with Covid Safe Plan
ACCOMMODATION	In Student Residences, a total of 10 people are allowed inside a unit, where all of those people are fully vaccinated.	In Student Residences, a total of 10 people are allowed inside a unit, where all of those people are fully vaccinated.
SCIENCE SPACE & DISCOVERY SPACE	Science Space and Discovery Space open at 1 person per 4sqm or 75% seated capacity and in line with NSW Health Covid Safe Plan requirements.	Science Space and Discovery Space open at 1 person per 2sqm.
LIBRARY	Open to capacity of 1,000 persons.	Open to capacity of 1,200 persons.
OUTDOOR GATHERINGS	Limited to 20 person.	Unlimited.
PLACES OF WORSHIP	Places of worship on campus open subject to 1 person per 4sqm rule, with no singing.	Places of worship on campus open subject to 1 person per 2sqm rule, singing permitted.

All stages: COVID safe behaviours



All stages: 6-step reporting process


1. ISOLATE
2. IDENTIFY
3. INFORM
4. CLEAN
5. REVIEW
6. COMMUNICATE

Find out how: uow.info/6-steps-covid (@staff intranet link)
 Find out more: uow.edu.au/coronavirus

Note: This plan is subject to change should there be any change to Public Health Orders, Local Government Area restrictions or at the University's discretion. Version 11 (from 8/24). Current as of 18th Oct 2021.



Figure 38: UoW COVID safe campus transition plan




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COVID-19 Travel Advice

Public transport services and safety advice change from time to time as a result of NSW Health requirements. Before you travel always check the timetable and follow all safety recommendations.

[CHECK THE TRIP PLANNER >](#)



[FOLLOW SAFETY ADVICE >](#)

Figure 39: COVID-19 travel advice - UoW

ANU University (which like the Sydney universities has experienced a period of prolonged lockdown in 2021) has published COVID-19 Guidelines⁴³. There is a reference to permitted “vehicle travel (in line with existing vehicle procedures and processes) in accordance with current restrictions in the local State or Territory”. Some adjustments have been made to the travel advice website⁴⁴ (Figure 40).

🏠 » Campus environment » Transport & parking

Transport & parking

Post ACT Covid-19 parking arrangements - ANU Acton

The ANU Acton campus parking arrangements have been updated following the lifting of the ACT COVID-19 lockdown. The return to campus will be on a staged basis to maintain the safety and wellbeing of the campus community. The following conditions are in place from 15 October 2021.

Parking office reception

The parking office reception in the Anthony Low building is closed. Individuals can still contact the parking office Monday – Friday 9am – 4pm by email to

- parking@anu.edu.au

Parking permit cancellations – including parking station and resident parking

Permit cancellation is an individual choice. If you cancel your pre-paid permit the refund will be held as part-payment of the next permit you purchase.

If your vehicle remains on campus e.g. you are a resident your permit should not be cancelled.

Payments, refunds and infringements

Permit holders who have paid for their permit in advance may cancel their permit. No retrospective refunds will be granted and it is the permit holder’s responsibility to cancel their permit. If you cancel your pre-paid permit the refund will be held as part-payment of the next permit you purchase.

Parking Office




Level 1, Anthony Low Building
(#124), Garran Road, ACTON ACT
2601

Telephone: (02)6125 0179

Opening Hours: 9:00am-5:00pm,
Monday-Friday

Systems

 vPermit: [Login](#) | [About](#)

[» more systems](#)

Figure 40: COVID adjusted parking arrangements at ANU

The University of Melbourne provides specific guidance on attending campus⁴⁵ including advice on using public transport safely⁴⁶ (Figure 41).

⁴³ <https://www.anu.edu.au/covid-19-advice/our-covid-safe-community/university-covid-19-guidelines>

⁴⁴ <https://services.anu.edu.au/campus-environment/transport-parking>

⁴⁵ <https://www.unimelb.edu.au/coronavirus/attending-campus>

⁴⁶ <https://students.unimelb.edu.au/student-support/coronavirus/return-to-campus>

Using public transport to get to campus

You'll be required to comply with the current [Victorian Government's public transport guidelines](#) when you travel.

We encourage you to plan your travel carefully and follow physical distancing and hygiene protocols when you do. Public Transport Victoria (PTV) have announced several initiatives and improvements to help you travel with confidence, including:

- All services, stops and stations will be disinfected and sanitised every day
- [PTV app](#) has real-time travel alerts, the ability to view your travel history and other new features
- [RideSpace](#) is a new, free, online tool displaying real-time passenger volumes on trains, individual platforms and stations across the metropolitan train network
- Anyone using myki money on metropolitan public transport between 9.30am and 4pm or after 7pm on weekdays will receive a [30% discount until 2 July 2021](#). You must touch on and touch off on all services, including trams, for the discounted fare to be automatically applied.
- Extra train services have been added either side of the morning and afternoon peaks to assist with physical distancing on trains and platforms
- More options are available for cashless top-ups of your myki, including the [PTV app](#), [PTV website](#) and an additional 100 Quick Top-Up machines across the network.

Figure 41: Guidance on using public transport safely to get to Uni Melb

Monash University provide comprehensive COVID-19 updates⁴⁷ including a link to the reopening roadmap⁴⁸. Provision has been made for campus operations under CovidSafe settings. Guidance for teaching delivery mode, Semester One, 2022 is as follows:

- If you're currently based in Australia, it's expected that you will be in Melbourne and prepared to attend on-campus activities from the commencement of semester one. We'll provide on-campus learning (in line with State Government restrictions) and online learning options will also be available. Due to limited places, preference for online options will be given to those students who are unable to physically attend campus due to travel and/or state border restrictions or being considered at-risk according to Federal Government COVID-19 health advice.
- If you're currently located overseas, we look forward to welcoming you to campus once Australian borders reopen. If you're unable to return to Australia at the commencement of the semester, online classes will be available to you.

⁴⁷ <https://www.monash.edu/news/coronavirus-updates>

⁴⁸ https://www.monash.edu/_data/assets/pdf_file/0007/2703184/reopening-roadmap.pdf

Monash University provides some specific transport and parking updates via their transport and parking site⁴⁹ (Figure 42).

Public Transport service updates

For up to date information on timetable changes during COVID-19, please visit the [PTV Coronavirus Information](#) website.

Clayton Bike Arrival Stations

To help in maintaining the cleanliness of these facilities, we have introduced the following measures at the Bike Arrival Stations:

- All personal items must be stored inside lockers or taken with you.
- Towels must **not** be stored on common drying racks, hooks, or in bathrooms
- Hand sanitiser and disinfectant wipes have been provided for all to use

University updates

For up-to-date Monash information regarding COVID-19, please visit our [dedicated website and fact sheet](#).

Figure 42: Extract from COVID-19 Transport and Parking Updates – Monash University

The UQ business continuity plan⁵⁰ classifies the impact of restrictions on university business activities by level of impact.

⁴⁹<https://www.monash.edu/international/our-locations/transport-parking/covid-19-transport-and-parking-updates>

⁵⁰<https://about.uq.edu.au/files/6420/Preparing%20business%20continuity%20plans%20for%20COVID-19%20impacts%20and%20restriction%20scenarios.pdf>

Towards a University Travel Choices program

TfNSW would like to learn more about the emerging and intended commuting patterns of university staff and students post-pandemic and the implementation of return to campus plans of universities to further inform the development of its Travel Choices program; and for sharing learnings with the NSW tertiary sector. Task 2 of the project will review the TfNSW Travel Plan Toolkit for Universities and associated resources for consistency with Task 1 and provide recommendations to TfNSW for synthesis with any unmet best practice. An extensive set of draft materials (referred to below) are available including examples of hard and soft interventions, draft survey materials, proposals for engagement activities and a university sustainable transport audit checklist.

The TfNSW Travel Choices program

Travel Choices⁵¹ is a free resource developed by TfNSW to help individuals, businesses and organisations prepare for and adapt to the changes to Sydney's transport network. The TfNSW Travel Choices team provides support for those making the shift to more sustainable ways of moving into, out of, and around Sydney by providing a methodology supported by a suite of materials designed to bring about travel behaviour change (Figure 43). The TDM team resources and templates are directed at developers and organisations interested in preparing Travel Plans, Access Guides and associated resources⁵² (Figure 44). The team also provide one-to-one advice to organisations seeking to prepare Travel Plans or otherwise achieve TDM solutions.

To date Travel Choices has worked with over 850 businesses and organisations across Sydney and has contributed to the 13% reduction in vehicles entering the CBD and a corresponding 14.7% increase in public transport trips during the morning peak.

During the pandemic TfNSW's COVIDSafe Travel Choices program⁵³ has been working with public and private sector organisations to manage demand on transport networks, and provide information and resources to help businesses make decisions about if, how, and when their employees travel to work (Figure 45). The program is a free resource for employers in Sydney and works with them to understand their needs, share information and updates about the transport system, and encourage safe and sustainable travel behaviour. TfNSW also produces a regular Travel Choices e-book⁵⁴ targeted at individuals, businesses and organisations. An evaluation of the COVIDSafe Travel Choices program is currently being carried out by external consultants.

A notable example of a successful implementation of the Travel Choices program was helping commuters make the shift to sustainable ways of commuting during the upgrade to Metro of the Epping to Chatswood Rail Line. Commuters switched to Station Link bus service and other public transport services, active transport, as well as retiming their trips to outside the peak hours and reducing their need to travel by working remotely.

51 <https://www.mysydney.nsw.gov.au/travel-choices>

52 <https://www.mysydney.nsw.gov.au/travelchoices/tdm>

53 <https://www.mysydney.nsw.gov.au/covidsafetravelchoices>

54 <https://www.mysydney.nsw.gov.au/sites/default/files/2021-05/Autumn%20Edition%20eBook%202021.pdf>

Existing strategies and transport policies	Construction/event timetable	Identified affected population	Census/journey to work/ population data
Known additional capacity improvements	Significant dates and lead times	Closures and service changes	Travel behaviour customer segmentation/insights
Public transport capacity data	Comms channels available	Modelling Data	Travel counts

Data Analysis above leads to TDM Strategy and Travel Behaviour Change Plan and Project below



Social Media	Printed collateral	Travel Action Plans	Business Intermediaries	Presentations
Media/Press Office/PR	Advertising campaign	1-2-1 meetings	Third party internal communications	Email/Newsflashes
	Incentives	Websites	Activations	
		On-mode channels		

Figure 43: The Travel Choices travel behaviour change program



Figure 44: Travel Choices resources

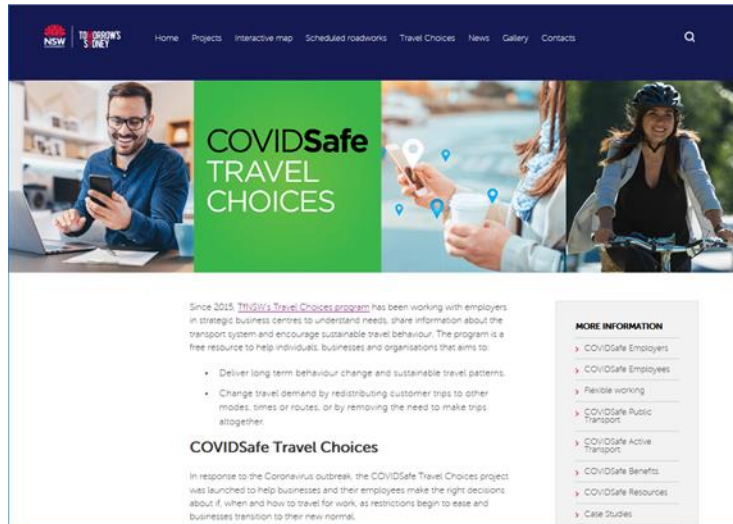


Figure 45: COVIDSafe Travel Choices

An independent evaluation of the Travel Choices program by external consultants is underway and has yielded the following high level findings:

- The Program has demonstrated the value of TDM
- TDM has reputational benefits for TfNSW
- Timing is an enabler of success

TfNSW have produced draft TfNSW Travel Plan Toolkit for Universities comprised of the following resources (Table 12).

Table 12: Travel Plan Toolkit for Universities

<ul style="list-style-type: none"> • Considerations for University Travel Plans • Examples of Soft Activities • Examples of Hard Activities • Online University Staff Travel Survey (Sample) • Possible Travel Plan Outcomes • Potential Engagement Techniques • Sample University Travel Plan Summary • Student Visitor Travel Survey • Survey Methods for Universities • Tips for Designing your Package of Activities • University Audit Checklist 	
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Later stages of this project will engage with different aspects of the toolkit. Task 3 will develop a survey of staff and students across selected USYD campuses to establish travel behaviour in the light of modified study and work modes across selected USYD campuses. Subsequent tasks will develop, refine and finalise materials to be used in the development of an

implementation plan for a USYD University Travel Choices program which will include proposals for the implementation of a regular travel survey, a set of engagement activities and a university sustainable transport audit checklist. The outcome of the project will provide robust recommendations for suggested initiatives to influence travel behaviours and demand in a university environment.

Preliminary recommendations for University Travel Plans

A crucial step in any university TDM program is the development of a robust travel plan and the draft University Travel Choices materials provide guidance on the preparation of a University Travel Plan (Figure 46). Based on the outcomes of the review of sustainable travel plans completed in this report and a comparative analysis of findings (Table 13) the following recommendations are offered to aid the development of refined guidelines.



DESCRIPTION: This simple university Travel Plan summary example gives an indication of how the Travel Plan summary template can be used for a university or precinct.

Identified needs Reduce negative impacts of site / precinct – Improve position as employer of choice – Create an active, healthy workforce						
Inputs	What	Who	When	Outputs	Impacts	Outcomes
Communications team design and production time Funds for campaign materials	Implement a branding initiative around health and active transport	Communications Team Travel Plan Coordinator	Within six months	Branded campaign Intranet articles about successes Personalised travel clinics	In 24 months: Reduce vehicle kms travelled for business by 10% Increase mode share: • cycling from 1% to 3% • walking from 5% to 8% • public transport from 65% to 75%	Meet relevant Sustainable Development Goals (SDGs) Improve corporate image
Volunteers for events	Participate in Ride2Work day and Walk2Work day	Travel Plan Coordinator	17 October 2018 6 April 2018	Ride / Walk to Work events		
Staff time to manage car pooling scheme Partnership across precinct	Launch car pooling scheme with prioritised or subsidised parking	Travel Plan Coordinator	Launch within 6 months	Car pooling scheme across precinct Communication materials	Reduce vehicles arriving at site in peak periods by 20%	Better staff/student retention Reduced staff turnover
Funds for shuttle bus Support from other businesses in precinct	Arrange staff bus service linking to nearest public transport hub and moving staff around precinct	Facilities Manager Travel Plan Coordinator	Funding – within 3 months Operating – within 6 months	Shuttle bus services	Increase staff satisfaction level from 85% to 95% Average sick days reduced from 12 to 10 per person	Increased staff / student satisfaction
Funds for facility upgrades	Improve cycle storage and changing facilities	Facilities Manager	Work completed in 8 months	Bicycle storage and change facilities upgraded		Reduce sick days due to ill health

Figure 46: Sample University Travel Plan summary

Table 13: Comparison of University Sustainable Travel Plans

University	USYD	UNSW	UTS	MQU	UOW	UQ	UWA
Freestanding STP (date)	√ (2015)	X part of Environmental Sustainability Plan – 2019	√ (2013)	X part of 2009 Concept Plan	X part of 2016 - 2036 Campus Master Plan + separate Transport & Access Action Plan (2019-21)	X (2016 to 2020) part of Sustainability Action Plan	√ (2020) (also part of 2021 UWA Green Impact Program)
Does the Travel Plan address a clear statement of needs?	Yes, with a strong focus on social equity	Yes, with very specific focus	Yes, detailed and builds on an evidence bas of requirements	Yes, very specifically related to influencing modal split	Yes	Yes, three foci with actions and timeframe	Yes, clear guiding principles established
Is the Travel Plan context clearly stated?	Very comprehensive (both internally and externally)	To an extent	Very clearly stated	To an extent	Yes (informed by 2019 travel survey)	No	Yes, very detailed (sits within UWA Master Plan)
Is there a description of the current and / or future situation?	Yes, with reference to both planned growth & commuter demographics / travel patterns	Yes	Yes (detailed)	Yes	Yes, thematic strategies and vision statements	Not in any detail	Yes, very detailed (partly based on 2019 travel survey)
Is there a clear Travel Plan Management and Engagement strategy?	Yes, includes areas for improvement	Yes, this is a strong section	Yes, relationship with the City of Sydney is very strong	Yes, very detailed objectives and principles	Weak on engagement	Yes, by thematic foci	Very strong, with responsibilities identified

Are anticipated Travel Plan Outcomes clearly articulated?	Articulated but not detailed	Yes	Yes	Weak (only high level)	Weak	No	Yes, targeted outcomes are identified by strategy objectives
Are Travel Plan Impacts identified?	Yes, but only high level	Limited	Yes, clearly stated	Only with respect to modal split	Only with respect to modal split	No	Targets are identified for each objective
Are Travel Plan Outputs identified?	Yes	Limited	Yes	Not obviously	Yes	No	Yes
Have Travel Plan Activities been identified	Yes, very detailed	Yes and responsibilities allocated	Yes and closely related to co-operation with City of Sydney	No	Yes, very comprehensive; by theme with H/M/L priority	Yes	Yes
Are Inputs and Travel Plan Resourcing adequately covered?	No specific detail	No	No	No info included	No info included	Yes (high level)	Yes (high level)
Is there a proposed Monitoring and Reporting process?	Yes, but quite weak	Yes, very detailed	No	No	Yes, very comprehensive with an annual status report against Actions	Yes (high level)	Yes (but no detail)
Travel Survey (dates)	✓ (2012, 2017, 2021)	✓ (2015, 2019)	✓ (2008, 2018)	✓ (2017, 2020, biennial)	✓ (2015, 2019)	X	✓ (2019)

Recommendations

- Where possible a standalone Sustainable Travel Plan (STP) is preferable to a transport section within a wider Sustainability Plan
 - Best practice case: The UWA Transport Strategy (prepared by external consultants)
- The period of refreshment for STPs was generally unclear although being part of a wider Sustainability Plan is likely to ensure more frequent updates.

- Responsibility for the production of an STP must be adequately resourced. In the case of MQU (2009) and UTS (2013) staffing issues may have impacted the revision of plans. This would seem to be a missed opportunity.
- More ambitious STPs identify a range of strategies to improve transport accessibility, equity, connectivity and environmental sustainability (such as USYD) and, especially in the light of COVID-19, telecommuting / flexible working should be considered as standard. It is recommended that a manageable number of core activities be identified. The MQU Concept Plan is notable is specifically using the term TDM and itemising a number of candidate measures. Table 14 provides a summary of experience with measures implemented based on this review of selected university STPs.
- Due attention should be given to the requirements of students and staff with disability or accessibility needs in terms of travel to and from campus. The Australian Disability Clearing House on Education and Training (ADCET) published guidelines in July 2020⁵⁵.
- The UOW Campus Master Plan contains vision statements for each of the key strategies identified for to encourage sustainable transport – this should be considered good practice.
- Every university should organise a regular travel survey of staff and students. This is one of the surest ways of developing an evidence base to inform the Sustainable Travel Plan. This was a feature of the USYD STAMP and the UWA Transport Strategy.
- A 2-year travel survey cycle would be appropriate (as at MQU and proposed for UWA). It is strongly recommended that results are made publicly available and with sufficient detail (as in the case of UNSW, MQU and UWA).
- It would be timely to conduct a travel survey to see how travel patterns have been impacted by COVID-19.
- A strong governance framework is essential (a good example is the UNSW Environmental Sustainability in the Plan) and this can have a positive knock-on effect for reporting and monitoring.
- Similarly, a robust implementation plan is required (the UQ SAP and the UWA Transport Strategy are strong in this regard).
- A common theme across the travel plans reviewed (whether free-standing or part of a wider document) is the relative paucity of detail related to resourcing the initiatives proposed. This is a common weakness.
- Similarly, most of the plans lacked a robust monitoring and evaluation process, with key exceptions being:
 - UOW who produce an annual progress report on their Transport and Access Action Plan which is itself an associated document of the Campus Master Plan.
 - UNSW Environmental Sustainability Plan which has an associated Annual Report.
- External collaboration and strong synergies with local and State government initiatives is recommended and this is a strong feature of the UTS STP.
- Finally, it is recommended that opportunities be sought for university sustainability teams to work together collaboratively (even globally) to establish best practices on the development and implementation of travel plans.

⁵⁵ <https://www.adcet.edu.au/resource/10382/guidelines-responding-to-the-needs-of-staff-and-students-with-disability-in-covid-19-return-to-campus-planning-for-australia-s-tertiary-institutions>

Table 14: Comparison of TDM Measures implemented as part of University STPs

TDM measure	USYD	UNSW	UTS	MQU	UOW	UQ	UWA
Freestanding STP (date)	√ (2015)	X (2019)	√ (2013)	X (2009)	X (2016 & 2020)	X (2016)	√ (2020)
Enhanced facilities for cyclists	√	√	√		√	√	√
Promote Ride to Work Day			√				
Inter-campus / campus to station shuttle Service	√	√		√	√	√	√
Sustainable Travel Guidance	√	√	√	√	√	√	√
Organised lift Sharing			√	√			√
Electric Vehicle charging facilities			√				
Improved accessibility for community with disability			√		√		√
Improved wayfinding across campuses (including enhanced facilities for pedestrians)	√	√		√	√	√	√
Promote WFH	√		√	√			
Promote AV and VC facilities as an alternative to business travel	√	√				√	
Variety of parking permits	√			√	√		√

Reduced number of parking spaces	✓		✓	✓			
Travel Survey (dates)	✓ (2012, 2017, 2021)	✓ (2015, 2019)	✓ (2008, 2018)	✓ (2017, 2020, biennial)	✓ (2015, 2019)	X	✓ (2019)
Travel pages updated with COVID-19 advice		✓		✓	✓		

Note: this table is primarily compiled from information contained with the STPs.

It is crucial that a STP proposes TDM measures which have a proven track record of success. What has been the impact of the TDM measures implemented?

- Enhancing facilities for cyclists are amongst the most common measures implemented, often in association with local government initiatives (e.g. UTS works closely with The City of Sydney and MQU benefits from being part of Connect Macquarie Park & North Ryde). UNSW has advocated for segregated cycleways in the local area for many years and has around 1000 bike racks in the Kensington campus. UNSW has seen a growth in cycling to 6% of total daily trips in 2019 from less than 4% in 2016. UWA has a stated objective of becoming a leading cycling campus.
- Similarly, improved wayfinding to / from and across campuses is frequently incorporated within STPs although walking as a principal mode is influenced by the residential opportunities available locally. UNSW have found that people are living closer and improvements to walking and cycling paths have provided further opportunity to use more sustainable modes of travel. A high number of staff and students walk to campus (over 20% of total trips in 2019 which has increased from 12% in 2016).
- Parking permits are widely used to manage demand (e.g. MQU). UOW has promoted convenient and affordable car parking for those who need it such as service and contractor vehicles, disabled users and regional students.
- In the cases where public and active transport is not available, UTS provides a free carpooling service and (uniquely) UTS takes part of the annual Ride to Work day by running its own Ride to UTS day. While organised carpooling can be challenging to organise there is evidence of a growth in informal carpooling (e.g. at UOW which recorded a 6.5% increase in the number of vehicles entering the campus with 2 or more passengers between 2010 and 2016).
- Communication remains a strong feature of sustainable transport initiatives. UTS produces a sustainable transport access guide as a downloadable brochure (important to help maintain the already high use of public transport by staff and students) and UOW has a downloadable transport access guide and a living on campus transport handbook.
- Where possible packages of TDM measures should be introduced. Results from MQU, part of Connect Macquarie Park, show that “drive alone” to campus has dropped from 45% (2017) to 37% (2020) while in the same period use of public transport to access campus has increased from 33% to 39%; use of active modes has increased from 5% to 12%. The strategy has been to prioritise active modes on campus, restrict car parking and improve the bus and rail service. Similarly, UOW has implemented a three-fold vision for pedestrians and cycling, public transport and vehicular access and car parking; in 2019 nearly 50% of staff and students used

public and active transport to get to the campus which was an appreciable increase from 2007 (20%).

- Availability of EV infrastructure can be expected to become more prominent and this has been identified by USYD as a future measure.

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Appendix 1 - The University of Sydney fleet management and decarbonisation case study

The University of Sydney (USYD) is an academic institution that has a fleet of more than 200 vehicles available for use by University staff, including cars and trucks (but not including tractors, equipment, boats etc and around 40 vehicles managed on behalf of non-university entities). Fleet management at USYD currently sits under Campus Infrastructure Services (CIS), which sources and maintains fleet vehicles through an external fleet management provider (Custom Fleet). Most University vehicles are pool vehicles available for staff booking through PoolCar.com.

USYD is at an early stage on its fleet decarbonisation journey and is currently focused on increasing fleet efficiencies and vehicle utilisation by rolling out the pooled vehicle system, replacing fleet vehicles with ones that are consistent and fit-for-purpose, and reducing the total number of vehicles. CIS is open to fleet electrification and decarbonisation discussions, but its priority at this stage is to centralise the management of all University vehicles, after which it will be in a much better position to change policy towards sustainable mobility.

Background

CIS looks after sustainability, ground, facilities management, security, new developments and buildings at USYD. CIS Fleet Management looks after all vehicles that require registration. The University vehicles are categorised into two main types: tool of trade vehicles, which are specialised vehicles like animal carriers, security vehicles, tractors etc. that are used only by specific University departments for specific purposes; and general vehicles like sedans, hatchbacks, vans, and a bus, which are multi-purpose and can be driven by most staff across business units. Currently, the tool of trade vehicles are all Faculty owned, and the general vehicles have mostly migrated to the centralised pool.

The Department of Design, Engineering Planning & Sustainability in CIS has a Sustainable Transport & Mobility Plan (STAMP) that defines the University's commitment to increasing sustainable mode share amongst both its students and staff, targeting 90% of sustainable travel modes by 2030. It aligned with the University's sustainability policy (University of Sydney, 2015⁵⁶) to "promote sustainable transport and mobility, through: (a) providing quality infrastructure and facilities to support active transport; (b) encouraging and supporting the use of active transport and public transport; and (c) using communications technology to minimise business travel." Based on this policy, CIS is responsible for "incorporating active transport and public transport requirements in master and precinct planning, and the design of major new building projects".

The University's fleet-related emissions make up 0.8% of the University's carbon footprint, but emissions related to electricity usage is at 93%, hence key activities to address emissions is focused in this area. The department looks at opportunities to improve the sustainability of all the University's operations, including review of fleet management when the right time presents, i.e. on contract renewal and incorporating appropriate sustainability specifications.

Step 1 Starting the journey

In 2015 USYD had a fragmented approach to vehicle ownership and management. Vehicles were not shared units at the University and each Faculty owned their own vehicles with no uniform standards in place. Individual Faculties were tasked with vehicle purchases assisted by Procurement Services, and while a policy was in place to replace vehicles after 4 years or 80,000 kms, it was not always enforced.

Individual Faculties were keeping their vehicles far beyond the specified limits to postpone replacement cost, and many were in a state of disrepair while becoming more expensive to maintain. In addition, while staff complained that there were not enough vehicles available to meet their needs, there were vehicles in other locations not being driven very often. As a result, the University initiated a plan to update the pool vehicle fleet and replace old unsafe vehicles. The plan was to develop a set of standard

⁵⁶ <https://www.sydney.edu.au/policies/showdoc.aspx?reclnum=PDOC2015/389&RendNum=0>

vehicle models (e.g. sedan, hatch, utility, 4WD) that could be moved around as required with the intention to increase vehicle utilisation and rationalise the number of vehicles overall. In addition, localised sites for groups of pool vehicles where they were most required were to be established.

Step 2 Understanding context, data, communicating goals and identifying barriers

The fleet management function was moved from Procurement Services to Campus Infrastructure Services (CIS), which outsources some non-core services to third parties, which it then manages. CIS was given the mandate to update the University fleet of pool vehicles, and a business case was put together to introduce a centralised system for pool vehicles with centralised funding. The business case went to the CIS Director and a Finance Infrastructure Group for approval.

Updating the fleet to pool vehicles needed to be sensitively managed as people generally do not like change. Updating the University fleet is a lengthy process and there were a lot of initial reservations with the proposal. These included a perceived loss of ownership if vehicles are “taken away”, people getting attached to their vehicles, people wanting special consideration when it comes to their vehicles and concerns about vehicles not being available when they are needed. This required considerable consultation with many people requiring input into the process, influencing activities across Faculties, and awareness of where reasonable trade-offs would need to be made. A Steering Committee with representatives from major vehicle owning Faculties was formed to assess all information, undertake consultation, discuss issues and make recommendations to University management regarding the process.

There was a degree of compromise needed in these negotiations, for example, where Faculties have genuine specialised requirements that cannot be accommodated through a generic standard vehicle type. This resulted in the development of a list of standard accessories (such as cargo barriers, bull bars and modified trays) that could be added to vehicles in specific Faculty pools and removed if no longer required. The Faculties became more receptive to the pool vehicle proposal when they no longer had to pay for vehicle ownership and replacement, and when old vehicles are sold, the funds go back to the Faculties that purchased them.

Step 3 Strategy and implementation

To-day the fleet management function is outsourced to an external fleet management provider (Custom Fleet), which centrally manages all the registrations, maintenance and servicing, fuel management, toll management, and purchase and sale of vehicles based on Faculty requirements. There is a permanent onsite fleet manager from Custom Fleet reporting to the CIS Contract and Commercial Manager, who manages the pool vehicles.

Each University pool vehicle is supplied with a driver guide, e-toll tag, parking permit and first aid kit.

Telemetry is installed into all University pool vehicles which automatically records the km driven for each trip. The University uses the PoolCar.com system to manage all its pool vehicle bookings. Staff can access the booking system through the PoolCar.com website. Users are charged km rate, day rate or hour rate to use the vehicles. Pool vehicle sites have been rolled out across the main campus where parking is restricted and some satellite and remote sites.

The issue of parking comes under CIS campus security. CIS has engaged a professional transport planning company to review and update traffic management and parking requirements, number of parking permits and assess travel behaviour staff and students. This is a sensitive issue with legal implications, e.g. how many disabled parking places are needed on campus. In addition, campus parking space numbers continue to decrease due to increasing campus building development.

Step 4 Monitoring and evaluation

The University (at May 2019) has a total of 201 motor vehicles (cars and trucks) in its fleet, with 81 of them pool vehicles. Over the past 3 years, 66 of the pool vehicles were migrated as part of the initiative and 54 are now leased through Custom Fleet, meaning there will be no future replacement fees for them. There are now 16 pool vehicle sites across University campuses, and pooled vehicles are becoming business as usual at the University. The initial business case for the centralised pool system

had the (then) vehicle utilisation at 60% because of the lack of reliable data and the need to be conservative in the modelling. While CIS does not encourage staff to drive more, it does encourage staff to use the pool vehicles whenever they do need to drive. As a result, vehicle utilisation at the University now averages at 70-75% by site and by season as estimated by CIS.

Step 5 Next focus

The next steps are to further rationalise the overall number of vehicles, increase the number of pool vehicle sites where practical and look for further opportunities to increase utilisation. There is also a focus on assisting Faculties in rationalising and updating their tools of trade vehicles and considering ways that that funding and acquisition may be centralised to assist with this. Finally, CIS needs to complete the work on the main campus to install more pool vehicle sites in existing car parks and increase coverage across the main campus and allow remaining Faculties to join PoolCar and dispose of remaining aged pool vehicles.

As most of the University pool vehicles are now in their 3rd year of a 4-year lease, once the lease is up the vehicles will need to be replaced. As CIS Fleet Management gets ready for the next batch of the pool vehicles, it is important to liaise with The Department of Design, Engineering Planning & Sustainability regarding appropriate sustainability specifications so that electric and lower emission vehicles can be a consideration as suitable vehicle replacement options during its fleet replacement cycles.

Appendix 2 - University travel planning – summary tables

University travel planning – selected universities in Sydney

University	Sustainable Travel Plan (date)	Travel Survey	Return to Campus Plan	Sustainable Transport Guidance for the university community (URL)	Contact
USYD	✓ (2015)	✓ (2012, 2017, 2021)	✓	http://sydney.edu.au/campus-life/getting-to-campus.html http://sydney.edu.au/sustainability	zoe.morrison@sydney.edu.au
UNSW	(✓) (part of Environmental Sustainability Plan – 2019)	✓ (2015, 2019)	✓ (web summary)	http://www.facilities.unsw.edu.au/getting-uni	William Syddall w.syddall@unsw.edu.au ; Arifa Sarfraz a.sarfraz@unsw.edu.au
Western Sydney	?		✓ (web summary)	http://www.westernsydney.edu.au/campuses_structure/cas/campuses/getting_to_uni	No contact with them
University of Technology Sydney	✓ (2013)	✓ (2008, 2018)	✓ (web summary)	http://www.uts.edu.au/current-students/managing-your-course/your-student-info/student-id-cards/travel-concessions http://www.uts.edu.au/sites/default/files/uts-tag.pdf (brochure)	Danielle.McCartney@uts.edu.au Head of Sustainability
Macquarie University	(✓) (part of 2009 Concept Plan)	✓ (2017, 2020, biennial)	✓	http://www.mq.edu.au/about/contacts-and-maps/getting-to-macquarie (includes link to 2020 Travel Survey Report)	Macquarie U's Sustainability area has been in flux since its Director left in late 2018. It was rescoped back into the Property Section.
University of Wollongong	(✓) (part of 2016 - 2036 Campus Master Plan) + separate Transport & Access Action Plan	✓ (2015, 2019)	✓ (web summary)	https://www.uow.edu.au/about/locations/wollongong/getting-to-campus/ (includes COVID-19 travel advice and a downloadable transport access guide)	environment_team@uow.edu.au Alison Scobie, Environmental Education and Compliance Officer Environment Unit Facilities Management Division

Notes:

(✓) – Incorporated within another strategic plan

USYD STP is publicly available at:

<https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSD-7081%2120190227T095318.606%20GMT>

USYD Environmental Sustainability Policy is available here:

<https://www.sydney.edu.au/policies/showdoc.aspx?recnum=PDOC2015/389&RendNum=0>

USYD Traffic and Parking Policy 2012 is available here:

<https://www.sydney.edu.au/policies/showdoc.aspx?recnum=PDOC2012/299&RendNum=0>

Amended policy + Traffic and Parking Procedures (2013):

<https://www.sydney.edu.au/policies/showdoc.aspx?recnum=PDOC2013/331&RendNum=0>

USYD Travel Policy 2018

<http://sydney.edu.au/policies/showdoc.aspx?recnum=PDOC2011/135&RendNum=0>

USYD sustainability pages: <https://intranet.sydney.edu.au/services/campus-services/sustainability.html>

<http://sydney.edu.au/sustainability>

USYD COVID-19 pages: <https://www.sydney.edu.au/covid-19/>

UNSW's Environmental Sustainability Plan is available at

<https://www.sustainability.unsw.edu.au/sites/default/files/documents/190925%20EnvironmentalSustainabilityPlan.pdf>

Update in Environmental Sustainability Report 2020 at: <https://www.sustainability.unsw.edu.au/sites/default/files/documents/UNSW-2020-Environmental-Sustainability-Report-FINAL.pdf>

There is also reference to the planned Campus Transport and Access Plan at <https://www.sustainability.unsw.edu.au/our-plan/travel-and-transport>

UNSW [UNSW Parking Rules](#).

UNSW 2019 Travel Survey Results: <https://www.estate.unsw.edu.au/news/2019-travel-survey-results>

UNSW: <https://www.covid-19.unsw.edu.au/safe-return-campus>

Western Sydney Uni – Parking and Traffic Policy.

<https://policies.westernsydney.edu.au/view.current.php?id=00043>

https://www.westernsydney.edu.au/parking_at_western/parking/parking_policy

Western Sydney Uni Return to Campus – <https://www.westernsydney.edu.au/coronavirus-information/return-to-campus>

UTS - UTS – Sustainable Transport Plan 2013-2020

https://www.uts.edu.au/sites/default/files/SUSTAINABLE_TRANSPORT_PLAN.140301.pdf

UTS Copy of 2018 Staff and Student Travel Survey Results (copy provided).

UTS Reactivate campus plan - <https://www.uts.edu.au/current-students/news/phased-plans-reactivate-campus>

UTS COVID-19 impacts and response - <https://www.uts.edu.au/current-students/news/coronavirus-and-international-travel-information>

MQU - Travel surveys are carried out biennially under the requirements of the [University's Concept Plan](#). There is a dedicated Traffic and Parking Policy (updated 1 May 2019) - [Traffic and Parking Rules](#).

MQU – Campus Master Plan – https://staff.mq.edu.au/support/office-and-property-services/property-services/property-planning-and-management/property_masterplan_2014.pdf

MQU – COVIDSafe-Plan (including return to campus) https://www.mq.edu.au/_data/assets/pdf_file/0007/989728/MQ-COVIDSafe-Plan.pdf

UOW – Campus Master Plan –

<https://documents.uow.edu.au/content/groups/public/@web/@pmcd/@smc/documents/doc/uow220188.pdf>

UOW – Transport and Access Action Plan - <https://www.uow.edu.au/about/locations/wollongong/getting-to-campus/strategy/>

UOW – Transport Plan press release (2015) - <https://www.uow.edu.au/media/2015/bold-transport-plans-to-smooth-the-path-for-campus-expansion.php>

UOW - COVID-19 response pages - <https://www.uow.edu.au/coronavirus/>

UOW – COVID safe campus transition plan - <https://documents.uow.edu.au/content/groups/public/@web/@pmcd/@smc/documents/doc/uow270778.pdf>

University travel planning – Go8 universities (not including USYD and UNSW)

University	Sustainable Travel Plan (date)	Travel Survey	Return to Campus Plan	Sustainable Transport Guidance for the university community (URL)	Contact
University of Melbourne	✓ (2020) (web summary only)		✓ (web summary)	https://about.unimelb.edu.au/news-resources/campus-services-and-facilities/transport-and-parking https://sustainablecampus.unimelb.edu.au/transport	Sue Hopkins sue.hopkins@unimelb.edu.au Sustainability Manager
Australian National University	(✓) * Only web summary with targets to satisfy by 2020		✓	https://services.anu.edu.au/campus-environment/transport-parking https://services.anu.edu.au/campus-environment/transport-parking/catching-the-bus	Clare de Castella Mackay - clare.decastella@anu.edu.au Institute Manager of the ANU Institute for Climate, Energy & Disaster Solutions (ICEDS). Sustainability contact until ANU successfully hires a Net Zero Project Manager.
University of Queensland	(✓) (2016 to 2020) part of Sustainability Action Plan		✓	https://my.uq.edu.au/information-and-services/maps-parking-and-transport/public-transport	Suzanne Davis - s.davis3@uq.edu.au Environment and Sustainability Program Officer
University of Western Australia	✓ (2020) (also part of 2021 UWA Green Impact Program)	✓ (2019)	✓ (web summary)	https://www.transport.uwa.edu.au/	Geraldine Tan geraldine.tan@uwa.edu.au Manager, Energy and Sustainability
University of Adelaide	(✓) Sustainability plan including transport (2016-2020)	✓ (2011)	✓ (web summary)	https://www.adelaide.edu.au/infrastructure/services/transport	Libby Hogarth – libby.hogarth@adelaide.edu.au Sustainable Development Planner
Monash University	(✓) Part of Sustainability Strategy	✓ (annual?)	✓ (web summary)	http://www.monash.edu/people/transport-parking	Vanessa Graham – vanessa.graham@monash.edu Energy & Sustainability Analyst

Notes:

UniMelb: <https://sustainablecampus.unimelb.edu.au/transport/sustainable-transport-plan> (link but not the actual Plan)

<https://www.unimelb.edu.au/coronavirus>

<https://www.unimelb.edu.au/coronavirus/attending-campus>

ANU: <https://services.anu.edu.au/campus-environment/sustainability-environment/sustainability/transport>

<https://www.anu.edu.au/covid-19-advice/our-covid-safe-community/covid-safe-campus-alert-system>

<https://www.anu.edu.au/covid-19-advice/our-covid-safe-community/university-covid-19-guidelines> (free-standing doc)

UQ Sustainability Action Plan (2016 – 2020) <https://sustainability.uq.edu.au/files/1197/UQ-SAP.pdf>

<https://about.uq.edu.au/files/6420/Preparing%20business%20continuity%20plans%20for%20COVID-19%20impacts%20and%20restriction%20scenarios.pdf> (good diagram)

<https://about.uq.edu.au/coronavirus>

UWA Transport Strategy. 22 Jul 2020.. Copy provided.

UWA 2019 Staff and Student Travel Survey. Completed by AECOM. Copy provided.

UWA Green Impact Program. <https://www.cm.uwa.edu.au/sustainability/green-impact-program>

<https://www.cm.uwa.edu.au/sustainability#ui-id-8>

<https://www.uwa.edu.au/covid-19-faq/home>

UA: Sustainability plan (2016-2020) includes transport [but content limited]: <https://www.adelaide.edu.au/infrastructure/system/files/media/documents/2020-09/campus-sustainability-plan.pdf>

Progress report (2017-2018): <https://www.adelaide.edu.au/ecoversity/ua/media/489/sustainability-progress-report-2017-to-2018.pdf>

<https://www.adelaide.edu.au/covid-19/>

MU: <https://www.monash.edu/campus-sustainability/sustainability-strategy> (web pages only)

<https://www.monash.edu/campus-sustainability/sustainability-strategy/mobility-as-a-service> (ref to MaaS)

<https://www.monash.edu/news/coronavirus-updates>

Appendix 3 - University Sustainable Travel Plan Evaluation template

Institution / Title of plan / date of preparation
Does the Travel Plan address a clear statement of needs? These could include for example: <ul style="list-style-type: none">• Minimise negative transport impacts of the site / organisation• Maintain and improve viability of existing or proposed site• Relocate with minimal impact on staff / student retention• Ensure people feel safe, secure and well informed about travel to and from the site• Give staff / students more flexibility to choose if, how and when they travel• Enable the organisation to sustainably expand
Is the Travel Plan context clearly stated? The <i>organisational context</i> and the <i>policy context</i> for the Travel Plan may include: <ul style="list-style-type: none">• How the Travel Plan fits with the broader, long term organisational goals and strategy• How the Travel Plan fits with Local and State Government goals and strategy• How the Travel Plan fits with the goals and strategy of other nearby organisations or precinct partners (if applicable)
Is there a description of the current and / or future situation? This may include: <ul style="list-style-type: none">• <i>location and facilities</i> (a description of the sites, facilities and business including: Number of staff / students; Number and type of persons accessing the site(s) other than staff / students (eg. visitors, contractors, delivery providers); Nature of key business activities affecting travel; Description of the site(s) including map showing locality, access roads and public transport; Plan of site showing car parks, access points and facilities such as cycle stands, end of trip facilities such as lockers and showers etc., Frequency of transport services to the site and any future changes expected to the transport network, Planned land use development, Access issues for those who may feel more vulnerable or who have mobility impairments, Description of current or future facilities that encourage sustainable travel, Description of current or future site barriers to sustainable travel).• <i>Current organisational policies affecting travel</i> (policies and procedures for staff and students related to travel including car use and parking, vehicle lease schemes, working / learning from home and business travel arrangements and any relevant salary packaging / loan arrangements or special circumstances (eg. overseas students are not eligible for student concession Opal cards)).
Is there a clear Travel Plan Management and Engagement strategy? This could include: <ul style="list-style-type: none">• Roles and responsibilities for Travel Plan development and monitoring• Decision making / governance framework• Steering committee details (if established)• Key internal and external stakeholders who helped develop the plan and how they will continue to be engaged• List roles of any organisations outside your organisation (eg bus operators, local government, state government, neighbours etc.)

Are anticipated Travel Plan Outcomes clearly articulated?

These could include:

- Travel accessibility for employees
- Workplace productivity
- Employee travel safety and personal security
- Employee health and wellbeing
- Business improvements
- Corporate sustainability
- Cost savings

Are Travel Plan Impacts identified?

A Travel Plan should set realistic, quantifiable performance indicators to measure progress towards achieving the impacts of the Travel Plan within a certain timeframe; eg. "increase the use of public transport by 10% in 3 years or have working from home available one day a week for all staff by 2020".

Are Travel Plan Outputs identified?

- Is there a list of the key products and services that need to be delivered to achieve the impacts?
- Outputs could include: Plans / reports, brochures, articles and presentations, digital materials (websites, social media), events, works, marketing campaigns, policies, incentives, facilities, infrastructure etc.)

Have Travel Plan Activities been identified?

Who, What, When – Does the Travel Plan define what activities need to occur to deliver the outputs, who is responsible for delivering them and timeliness for delivery?

Are Inputs and Travel Plan Resourcing adequately covered?

- Is there a list of resources (time, people, budget) for Travel Plan development? These could include:
 - Implementation costs – construction of end of trip facilities, staff / student shuttles
 - Operating costs – security for accessing end of trip facilities, providing Opal cards for staff travel, or a new car park management system
 - Staff costs – people to coordinate, manage and monitor; developing communications material
 - Ongoing maintenance and renewal costs
 - Potential savings, if known

Is there a proposed Monitoring and Reporting process?

This could include:

- How the Travel Plan will be monitored (eg. by using an annual travel survey)
- How progress against the Travel Plan will be reported and to whom (eg. Board)
- Who is responsible for collecting data and reporting
- When the Travel Plan (in particular, activities and targets) will be reviewed and adjusted
- If the Travel Plan is a condition of consent, are the relevant planning authority requirements considered?



Identified needs <Insert your organisation's identified needs here>						
Inputs	Activities			Outputs	Impacts	Outcomes
what resources are required?	what	who	when	what needs to be created?	performance indicators	what will be achieved?
<i>E.g. HR Department / Student Services staff resources</i>	<i>Develop Flexible Working / Learning policies – including working from home, flexible hours, remote working, etc..</i>	<i>HR/Student Services Department</i>	<i>October 2018</i>	<i>Flexible Working Policy</i>	<i>20% staff on flexible working agreements by July 2019 20% improvement in staff / student satisfaction surveys for health and wellbeing by 2020</i>	<i>Improved health and wellbeing of staff / students Increase in efficiency in teaching / learning Organisational savings on office accommodation</i>
<i>Funds for shuttle bus</i>	<i>Arrange staff / student shuttle service linking to nearest public transport hub</i>	<i>Facilities manager Travel Plan coordinator</i>	<i>Funding – within 3 months Operating – within 6 months</i>	<i>Shuttle bus services</i>	<i>Reduction in private vehicles arriving at site in peak by 20% by 2020</i>	<i>Reduce number of vehicles arriving at the site during peak periods</i>

Source: Travel Plan Summary (TfNSW)

